Supreme Court, U. S.
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In The

Supreme Court of the United States

October Term, 1978

No. 78-160

Roy Tibbals Wilson, Charles E. Lakin, Florence Lakin, Harold Jackson, Darrell L., Harold, Harold M. and Luea Sorenson,

Petitioners,

R. G. P. Incorporated, Otis Peterson, Travelers Insurance Company, State of Iowa and State Conservation Commission of the State of Iowa,

Respondents (Petitioners on separate petitions),

vs.

Omaha Indian Tribe and United States of America,

Respondents.

APPENDIX TO PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE EIGHTH CIRCUIT

EDSON SMITH and
ROBERT H. BERKSHIRE
3535 Harney Street
Omaha, Nebraska 68131

THOMAS R. BURKE and
LYMAN L. LARSEN
1900 First National Center
Omaha, Nebraska 68102

Counsel for Petitioners, Roy Tibbals Wilson, Charles E. Lakin, Florence Lakin and Harold Jackson

FRANCIS M. GREGORY, JR.
1666 K Street, N. W.
Washington, D. C. 20006

of Counsel

MAURICE B. NIELAND
300 Toy National Bank Building
Sioux City, Iowa 51101

Counsel for Petitioners, Harold Sorenson, Harold M. Sorenson, Luea Sorenson and Darrell L. Sorenson

COCKLE PRINTING CO., 1822 St. Mary's Ave., Omaha

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APPENDICES INDEX

APPENDIX A

UNITED STATES COURT OF APPEALS
FOR THE EIGHTH CIRCUIT

Nos. 77-1384, 77-1387

No. 77-1384

OMAHA INDIAN TRIBE, TREATY OF 1854 WITH THE UNITED STATES (10 STAT. 1043), ORGANIZED PURSUANT TO THE ACT OF 6/18/34 (48 STAT. 984; 25 U. S. C. 476) AS AMENDED,

Appellant,

vs.

ROY TIBBALS WILSON, CHARLES G. LAKIN, FLORENCE LAKIN, R. G. P. INCORPORATED, AN IOWA CORPORATION, HAROLD JACKSON, OTIS PETERSON, TRAVELERS INSURANCE COMPANY, THE STATE OF IOWA, DARRELL L., HAROLD, HAROLD M. AND LUEA SORENSON, STATE CONSERVATION COMMISSION OF THE STATE OF IOWA,

Appellees.

Appeal from the United States District Court for the Northern District of Iowa

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No. 77-1387

UNITED STATES OF AMERICA,

Appellant,

vs.

ROY TIBBALS WILSON, CHARLES G. LAKIN, FLORENCE LAKIN, R. G. P. INCORPORATED, AN IOWA CORPORATION, HAROLD JACKSON, OTIS PETERSON, TRAVELERS INSURANCE COMPANY AND THE STATE OF IOWA,

Appellees.

Appeal from the United States District Court for the Northern District of Iowa

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Submitted: June 13, 1977
Filed: April 11, 1978

Before LAY, STEPHENSON and HENLEY, Circuit Judges.

LAY, Circuit Judge.

On March 16, 1854, the Omaha Indian Tribe entered into a treaty with the United States in which certain lands, including 2,900 acres of land located in the then Territory of Nebraska in an area known as Blackbird Bend, were reserved by the Tribe as part of an agreement which ceded to the United States all other land west of the "centre of the main channel of said Missouri river. . . ."[1] Act of March 16, 1854, Art. 1, 10 Stat. 1043. At

1 The treaty was entered into by George W. Manypenny, Commissioner on the part of the United States, ratified by the United States Senate and signed by President Franklin Pierce on the 21st day of June 1854. "Marks" indicating agreement of the Tribe were made by the then Chiefs of the Omaha Indian Tribe: Shon-ga-ska, or Logan Fontenelle; E-sta-mah-za, or Joseph Le Flesche; Gra-tah-mah-je, or Standing Hawk; Gah-he-ga-gin-gah, or Little Chief; Tah-wah-gah-ha, or Village Maker; Wah-no-ke-ga, or Noise; and So-da-nah-ze, or Yellow Smoke. In addition to providing for the cession of land to the United States and defining the limits of the Reservation's boundary, the Omaha Tribe agreed to vacate all other lands acknowledging their complete dependence on the government of the United States, Art. 10. The United States agreed to pay certain monies over the ensuing 40 years and to aid the Tribe by various affirmative means to "advance them in civilization." Art. 4. The other articles of the treaty include several specific covenants and pledges exchanged between the United States and the Tribe. See Act of March 16, 1854, 10 Stat. 1043.

the time the Omaha Indian Reservation was established the reserved land within Blackbird Bend was situated on the west side of the Missouri River. However, by 1923 the river had moved more than two miles to the west of the original boundary line so that much of the land contained within the original Blackbird Bend area was situated on the east side of the river. The defendants assert that early movements of the Missouri River had completely washed away the Reservation lands and that the land now existing within the former boundaries of the Barrett Survey is soil which has accreted to the Iowa riparian land.

As a result of this dispute the United States and the Omaha Indian Tribe, a duly organized corporate body, in 1975 sought equitable relief asserting their right to the 2,900 acres of land now situated in Monona County, Iowa. The United States throughout this litigation acts in the capacity of trustee of the Tribe's reservation lands.[2] The defendants claim title to the land in dispute and seek by way of counterclaims to quiet title in their names. The defendants are Roy Tibbals Wilson, Harold Jackson, a tenant of Roy Tibbals Wilson, Harold Sorenson, Luea Sorenson, Darrell L. Sorenson, Harold M. Sorenson, Charles Lakin, Florence Lakin, the State of Iowa and the State Conservation Commission, R. G. P. Incorporated, Travelers Insurance Company, mortgagee of R. G. P., and Otis Peterson, a tenant of R. G. P.

2 While Indians have the right of use and occupancy to tribal lands, the United States holds the land as a trustee for the benefit of the Indians. *See Morrison v. Work*, 266 U. S. 481, 485 (1925). *See also Choate v. Trapp*, 224 U.S. 665, 678 (1912); *United States v. Rickert*, 188 U. S. 432, 442-43 (1903). F. Cohen, Handbook of Federal Indian Law 94-95 (AMS Press ed. 1972).

From at least the 1940's until April 2, 1975, the defendants and their predecessors in title had occupied, cleared and cultivated the land in dispute. After April 2, 1975, with the assistance of the Bureau of Indian Affairs and with the approval of the United States, the Omaha Indian Tribe seized possession of the land and is presently farming it. After the Tribe had seized the land the United States District Court, the Honorable Edward J. McManus presiding, granted a preliminary injunction permitting occupancy of the land by the Tribe during the pendency of this litigation, but requiring certain accounting procedures pertaining to the crops grown on the land be instituted. Following trial and entry of judgment in favor of the defendants, this court on May 13, 1977, entered a stay pending appeal maintaining in effect the terms of the district court's preliminary injunction.

After a lengthy trial the district court, the Honorable Andrew W. Bogue presiding, found that the boundary of the Omaha Indian Reservation had shifted with the movements of the Missouri River and quieted title in the defendant landowners. The court found that the plaintiffs had failed to prove that the river movements were controlled by the doctrine of avulsion and held that the river had changed by reason of the erosion of reservation land and accretion to Iowa riparian land. *United States v. Wilson,* 433 F. Supp. 67 (N. D. Iowa 1977). The district court supplemented its findings on the merits with an opinion resolving choice of law problems, setting forth principles governing avulsion and accretion and discussing the allocation of the burden of proof. *United States v. Wilson,* 433 F. Supp. 57 (N. D. Iowa 1977).

I. *The Issues.*

The dispute centers on the ownership of land in an area known as Blackbird Bend which was surveyed in 1867 by T. H. Barrett[3] on behalf of the General Land Office of the United States.[4] The basic issue on appeal is whether the boundary of the reservation remained at its 1854 location despite the significant changes in the location of the Missouri River since that time.

We vacate the judgment of the district court rendered in favor of the defendants; we find the trial court erroneously placed the burden of proof on the Omaha Indian Tribe and failed to properly apply governing prin-

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3 Barrett's survey established the meander line for the Nebraska shore of the Missouri River.

4 Claims to land outside of an area described by the 1867 Barrett Survey were severed from the present case. The trial court explained the severance as follows:

> Approximately 8000 acres of land claimed by the Omaha Indian Tribe in C75-4067 and all issues of damages were severed. The severance of the Barrett Survey Area from the other claims of the Omaha Indian Tribe was necessary because the Barrett Survey line is the only clearly ascertainable line of demarcation, and was the boundary of the area of which the Tribe received possession by virtue of a preliminary injunction entered June 5, 1975. Thus as to the Barrett Survey Area the action was construed as an equitable quiet title action, and the demands of various defendants for a jury trial were denied as to that area. As to lands claimed by the Tribe outside the Barrett Survey Area, the action was treated as a legal action for ejectment, in which defendant's demands for a jury trial may be sustainable. This left the 2900 acres within the Barrett Survey as the subject matter of this trial since the dispute over that land is common to all three lawsuits.

United States v. Wilson, 433 F. Supp. 67, 69 (N. D. Iowa 1977).

ciples of federal law relating to avulsion and accretion; we hold the evidence is too speculative and uncertain to show that the reservation boundary shifted by reason of accretion and that the defendants have failed to overcome the presumptive right of possession and title in the Tribe to the reservation lands.

II. *The Historical Facts.*

The Treaty of 1854 established the eastern boundary of the reserved land at the center of the main channel of the Missouri River.[5] Because the exact location of the thalweg[6] of the Missouri River could not now be estab-

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5 Article One of the treaty provided in part:

> The Omaha Indians cede to the United States all their lands west of the Missouri river, and south of a line drawn due west from a point in the centre of the main channel of said Missouri river due east of where the Ayoway river disembogues out of the bluffs, to the western boundary of the Omaha country, and forever relinquish all right and title to the country south of said line: *Provided, however,* that if the country north of said due west line, which is reserved by the Omahas for their future home, should not on exploration prove to be a satisfactory and suitable location for said Indians, the President may, with the consent of said Indians, set apart and assign to them, within or outside of the ceded country, a residence suited for and acceptable to them.

Act of March 16, 1854, Art. 1, 10 Stat. 1043.

6 The word thalweg is derived from the German language and is said to be

> [t]he channel continuously used for navigation. In other words, the thalweg is not a boundary line but in fact a boundary area, because the channel of a river is never a precise line. De la Pradelle emphasizes this special character in one of his definitions: the thalweg is that specific area in the river which is in practice the variable route followed by boatmen on their way down the river.

(Continued on next page)

lished and since the Barrett Survey was conducted only a few years after the reservation was established, the trial court accepted the Barrett Survey as representing the original location of the reservation's boundary.[7] *See* Plate I.

From 1854 until sometime near 1875 it is generally accepted that the Missouri River moved east until it

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(Continued from previous page)

Bouchez, *The Fixing of Boundaries in International Boundary Rivers,* 12 Int'l & Comp. L. Q. 789, 793 (1963) (footnote omitted).

> The United States Supreme Court adopted the thalweg principle as the standard rule for establishing interstate boundaries in *Iowa v. Illinois,* 147 U. S. 1, 10 (1893). Later, in *Minnesota v. Wisconsin,* 252 U. S. 273 (1920), the Court explained the purpose of the rule.
>
> > The doctrine of *Thalweg,* a modification of the more ancient principle which required equal division of territory, was adopted in order to preserve to each State equality of right in the beneficial use of the stream as a means of communication. Accordingly, the middle of the principal channel of navigation is commonly accepted as the boundary. Equality in the beneficial use often would be defeated, rather than promoted, by fixing the boundary on a given line merely because it connects points of greatest depth. Deepest water and the principal navigable channel are not necessarily the same. The rule has direct reference to actual or probable use in the ordinary course, and common experience shows that vessels do not follow a narrow crooked channel close to shore, however deep, when they can proceed on a safer and more direct one with sufficient water.
>
> *Id.* at 282.
>
> *See also New Jersey v. Delaware,* 291 U. S. 361, 381 (1934); *Louisiana v. Mississippi,* 202 U. S. 1, 49 (1906); *Uhlhorn v. U. S. Gypsum Co.,* 366 F. 2d 211, 215 (8th Cir. 1966); *Whiteside v. Norton,* 205 F. 5, 9 (8th Cir. 1913); 1 C. Hyde, International Law § 138 (2d rev. ed. 1951); 8 Op. Att'y Gen. 175 (1856).

7 Although the exact words used in acts of Congress defining the boundaries of a state may vary (for example, "middle of the river," "middle of the main channel," "mid-channel"

(Continued on next page)

reached the Iowa easterly high bank.[8] The evidence shows the river was approximately 800 feet wide at that time. The first controversial movement of the river in this case occurred after it reached its easterly position against the high bank.[9] By 1879 a survey conducted by the Missouri River Commission showed the river, at high flood stage, to be almost 10,000 feet wide covering as much as two-thirds of the Barrett Survey meander lobe. The thalweg had shifted from against the easterly high bank to a point nearly 6,000 feet to the west. *See* Plate II.

(Continued from previous page)

or "middle thread of the channel") the Supreme Court has presumed that since "[i]t is the free navigation of the river . . . that States demand shall be secured to them," *Iowa v. Illinois, supra* at 13, *quoting Buttenuth v. St. Louis Bridge Co.*, 123 Ill. 535, 17 N. E. 439 (1888), in the absence of a contrary agreement, the middle of the main channel, the thalweg, establishes the interstate boundary. *Iowa v. Illinois, supra* at 13.

8 There is no disagreement as to the Tribe's description that:

> The Easterly High Bank is a natural monument demarking the furthest point of progression of the eastern migration of the Missouri River from the eastern boundary of the 2900 acres, as surveyed by Barrett in 1867.
>
> It commences at a point on the Easterly High Bank located approximately 2,200 feet southwesterly from the corner common to Sections 20, 21, 28 and 29, T. 84 N., R. 46 W. of the 5th P. M., continuing down said Easterly High Bank a distance of approximately 3-1/2 miles to a point on the Easterly high Bank approximately 4,900 feet northwesterly of the common corner of Sections 4, 5, 8, and 9, T. 83 N., R. 46 W. of the 5th P. M.

9 The exact time at which the river reached and then left the easterly high bank is not certain. All parties agree the 1875 atlas map, *see generally* Plate I, showing the river against the high bank could have been prepared sometime before 1875.

After 1879 the river moved to the northeast until it reached the Iowa northerly high bank[10] sometime near 1912. *See* Plate III. The second dispute between the parties involved the movement of the river away from its northerly high bank location to a location significantly to the south in the period between about 1912 and 1923. *See* Plate IV. By 1923 almost the entire peninsula described by the Barrett Survey had been cut off by the river's movement.

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10 The Tribe describes the northerly high bank as

> "a natural monument demarking the furthest migration northward of the Missouri River from the northern boundary of the 2900 acres as surveyed by Barrett in 1967. . . .
>
> The course of the Northerly High Bank is described as follows: The Iowa Northerly High Bank runs southeasterly through SE2 of Section 13, T. 84 N., R. 47 W. and continuing through the NE4 of Section 24, T. 84 N., R. 47 W., then easterly through the NW4 and the N2NE4 of Section 19, T. 84 N., R. 46 W., thence southerly approximately 2,000 feet through the E2NE4 of Section 29, T. 84 N., R. 46 W., terminating at the point of intersection of the Iowa Easterly High Bank. . . .

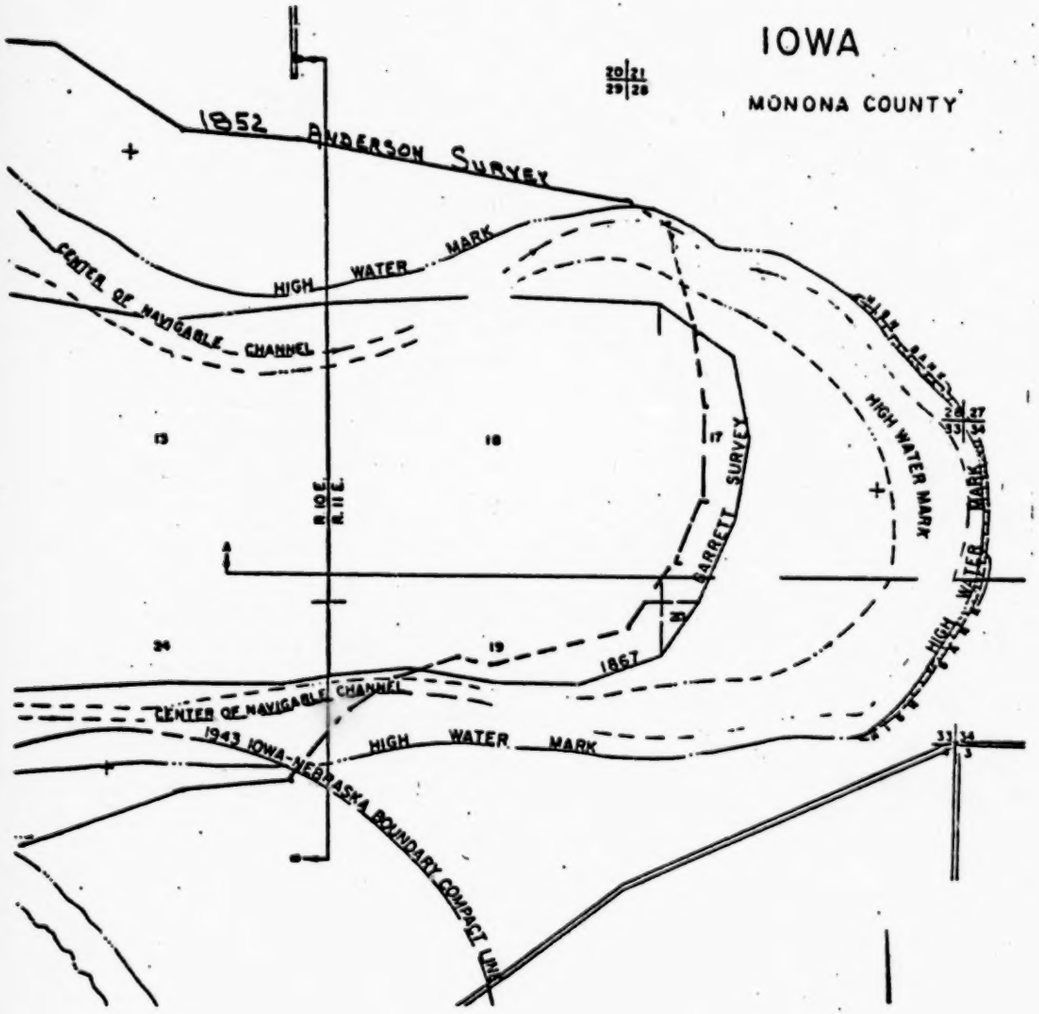


PLATE I.

Sketch of river's position in approximately 1875 showing 1852 Anderson and 1867 Barrett Survey meander lines.

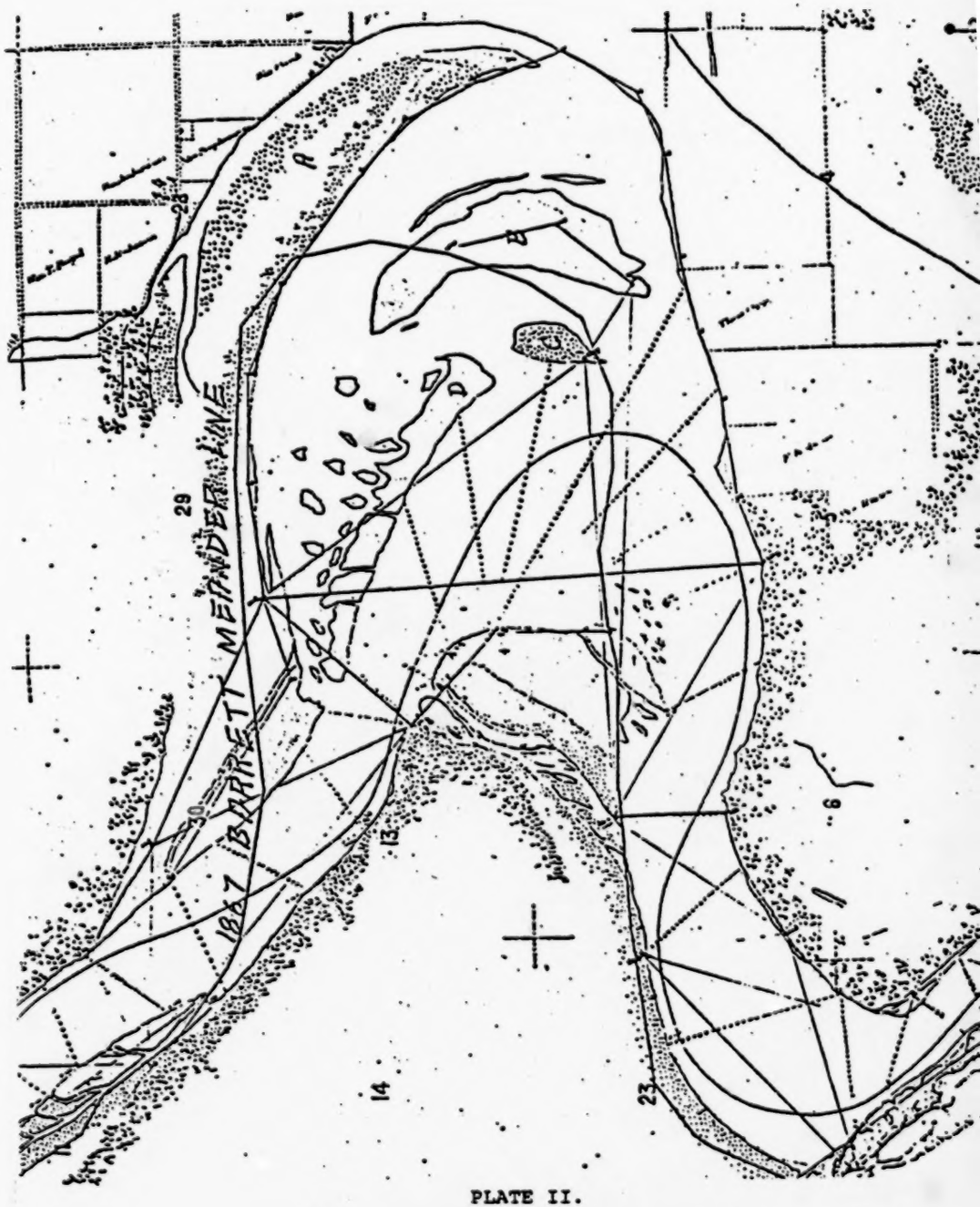
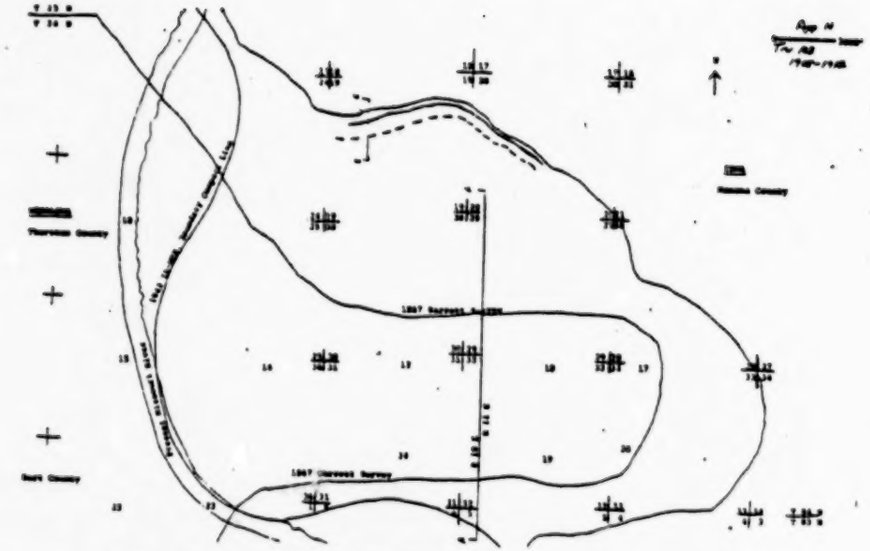


PLATE II.

1879 Missouri River Commission survey map.



Sketch of river against the northerly high bank.

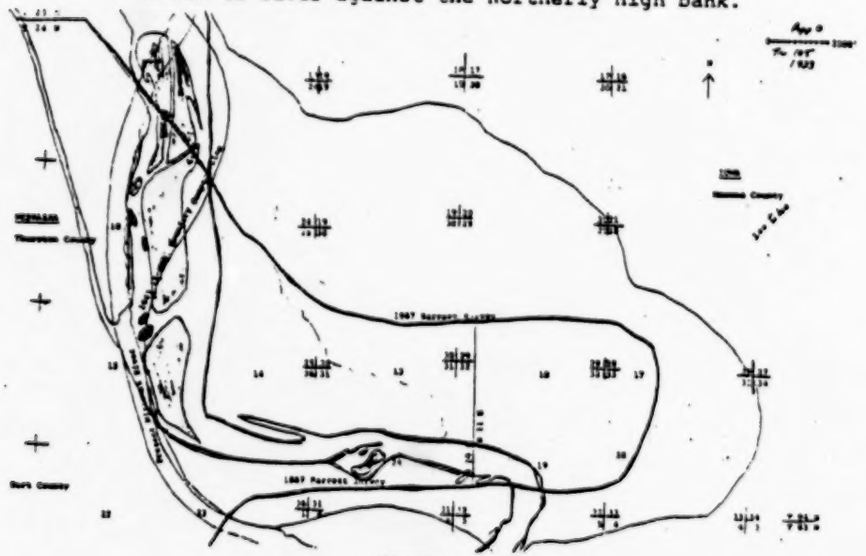


PLATE IV.

1923 Corps of Engineers map.

III. *Choice of Law.*

At trial the Tribe and the government asserted that federal law should control while the defendants contended that Iowa law should have been applied. The district court, however, applied Nebraska law in evaluating the facts of the case. On appeal the Tribe and the government renew their assertion that federal law should be applied in the resolution of this case. We hold that the governing principles of federal law vary significantly with the trial court's construction of state law and that the court erred in failing to apply that federal law.

A. *Interstate Boundaries.*

In *Oregon ex rel. State Land Board v. Corvallis Sand & Gravel Co.*, 429 U. S. 363 (1977), the Supreme Court reaffirmed the basic rule that the laws of the several states determine the ownership of the banks and shores of waterways. *Id.* at 378-79. However, the Court recognized an important caveat to this rule:

> If a navigable stream is an interstate boundary, this Court, in the exercise of its original jurisdiction over suits between States, has necessarily developed a body of federal common law to determine the effect of a change in the bed of the stream on the boundary.

Id. at 375.[11]

As the Supreme Court noted in *Arkansas v. Tennessee*, 246 U. S. 158, 176 (1918):

---

11 *See also Illinois v. City of Milwaukee*, 406 U.S. 91, 105-06 (1972); *Arkansas v. Texas*, 346 U. S. 368, 372-73 (1953) (Jackson, J., dissenting); *Hinderlider v. LaPlata River & Cherry Creek Ditch Co.*, 304 U. S. 92, 110 (1938); Note, *The Federal Common Law*, 82 Harv. L. Rev. 1512, 1520 (1969).

> [T]hese dispositions are in each case limited by the interstate boundary, and cannot be permitted to press back the boundary line from where otherwise it should be located.

Cf. St. Louis v. Rutz, 138 U. S. 226, 250 (1891).

Federal common law is applicable even where only a single state is involved in a controversy with a private party, *see Cissna v. Tennessee,* 246 U. S. 289 (1918), or where only private parties are involved, *see Hinderlider v. La Plata River & Cherry Creek Ditch Co.,* 304 U. S. 92 (1938); *Committee for Consideration of Jones Falls Sewage System v. Train,* 539 F. 2d 1006, 1009 n. 8 (4th Cir. 1976); *Port of Portland v. An Island In Columbia River,* 479 F. 2d 549 (9th Cir. 1973); *Sherrill v. McShan,* 356 F. 2d 607 (9th Cir. 1966); *Iselin v. La Coste,* 139 F. 2d 887 (5th Cir.), *cert. denied,* 321 U. S. 790 (1944), as long as the interests of more than one state are sufficiently implicated in the potential outcome. The rendering of a decision in a private dispute which would "press back" an interstate boundary sufficiently implicates the interests of the states to require the application of federal common law.

In this case any claim that the reservation's eastern boundary had changed would of necessity have concerned the interstate boundary between Iowa and Nebraska, at least until 1943, thereby invoking federal law since both boundaries were located at the thalweg of the Missouri River. However, in 1943 Iowa and Nebraska entered into a compact under which the boundary between the states was permanently established at the middle of the main

channel of the Missouri River in essentially its position in 1943. Iowa-Nebraska Boundary Compact, Iowa Code 1971, p. lxiv; 1943 Iowa Acts ch. 306; 1943 Nebraska Laws ch. 130. Ratified by Congress in Act of July 12, 1943, 57 Stat. 494 (1943).[12] To apply the compact it is nevertheless necessary to establish title good in one state or the other as of 1943. Iowa-Nebraska Boundary Compact § 3. Good title in a state prior to 1943 in turn depends upon the location of the thalweg of the Missouri River, a determination which would have been controlled by federal law. Thus, in this case, since the issue concerns who held good title to the land in question prior to 1943, federal law must be applied.

B. *Indian Law.*

An equally compelling reason for applying federal law is the special relationship between the United States and the Omaha Indian Tribe and the nature of the interest litigated. The trial court rejected this position under the authority of *Fontenelle v. Omaha Tribe of Nebraska,* 298 F. Supp. 855 (D. Neb. 1969), *aff'd,* 430 F. 2d 143 (8th Cir. 1970), where the Nebraska federal district court applied Nebraska law in an accretion-avulsion dispute between the Omaha Indian Tribe and Individual Indians who traced their title back through individual patents is-

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12 The compact provided for the cession of land previously lying within the boundaries of one state to the state within which it was located following the establishment of the permanent boundary. Titles, mortgages, and other liens good in the ceding state must be recognized as valid in the receiving state. Iowa Code 1971, p. lxiv; 1943 Iowa Acts ch. 306, §§ 2-3; 1943 Nebraska Laws ch. 130, §§ 2-3. See *also Nebraska v. Iowa,* 406 U. S. 117, 122 (1972).

sued to their predecessors by the United States.[13] Instead, the trial court, finding no federal regulatory program involved[14] and no specific act of Congress which displaced state law, reasoned, citing *Herron v. Choctaw & Chickasaw Nations,* 228 F. 2d 830 (10th Cir. 1956), and *Francis v. Francis,* 203 U. S. 233 (1906), that local law governed title disputes between the Indian tribe and private claimants. 433 F. Supp. at 61.

It has long been held that the rights and incidents of ownership attaching to grants made by the United States of public lands bounded on streams or other bodies of water, navigable or non-navigable, made without reservation or restriction, are to be construed as to their effect according to the law of the state in which the land lies. The fact that a conveyance disposes of tribal lands of Indians under guardianship does not alter the rule. *See Oklahoma v. Texas,* 258 U. S. 574, 595 (1922). The *Fontenelle* decision and the other cases cited by the trial court fall within this settled doctrine. In *Packer v. Bird,* 137 U. S. 661, 669 (1891), the Court observed:

> The courts of the United States will construe the grants of the general government without reference to the rules of construction adopted by the States for their grants; but whatever incidents or rights attach to the ownership of property conveyed by the government will be determined by the States, subject to the condition that their rules do not impair the efficacy of the grants or the use and enjoyment of the property by the grantee.

13 Although this court affirmed the district court, the issue of state vis-a-vis federal law was not discussed. This court cited only federal authorities relating to the accretion-avulsion issue.

14 *See generally United States v. Little Lake Misere Land Co.,* 412 U. S. 580 (1973).

The present dispute is not related to incidents or rights flowing from a conveyance of public land or related to a patent grant of Indian allotment lands. Instead, the direct challenge made by the Iowa landowners here affects the boundary line to the reservation land itself, as it was originally contained in the Barrett Survey and established by the Treaty of 1854. The claims asserted by the defendants attempt to extinguish the aboriginal rights of the Omaha Indian Tribe, guaranteed by treaty, in these lands.[15] Here the Omaha Indian Tribe claims its right to occupy and possess the lands in question arises under federal law. Presumptively, at least, this right has never been extinguished. *See* discussion of 25 U. S. C. § 194 *infra.* Under the circumstances the Supreme Court's observation in *Oneida Indian Nation v. County of Oneida,* 414 U. S. 661, 677 (1974), is applicable here:

> In the present case, however, the assertion of a federal controversy does not rest solely on the claim of a right to possession derived from a federal grant of title whose scope will be governed by state law. Rather, it rests on the not insubstantial claim that federal law now protects, and has continuously pro-

15 In the early case of *Worcester v. Georgia,* 31 U. S. (6 Pet.) 515, 556-57 (1832), Chief Justice Marshall observed:

> From the commencement of our government, congress has passed acts to regulate trade and intercourse with the Indians, which treat them as nations, respect their rights, and manifest a firm purpose to afford that protection which treaties stipulate. All these acts . . . manifestly consider the several Indian nations as distinct political communities, having territorial boundaries, within which their authority is exclusive, and having a right to all the lands within those boundaries, which is not only acknowledged, but guaranteed by the United States.

tected from the time of the formation of the United States, possessory right to tribal lands, wholly apart from the application of state law principles which normally and separately protect a valid right of possession.

State law dealing with riparian rights cannot unilaterally extinguish or deprive Indians of their tribal lands. The land area involved in this appeal relates solely to the original reservation land. Therefore, germane here is the Supreme Court's statement in *Oneida* that: "There being no federal statute making the statutory or decisional law of the State of New York applicable to the reservations, the controlling law remained federal law; and, absent federal statutory guidance, the governing rule of decision would be fashioned by the federal court in the mode of the common law." *Id.* at 674.[16] Riparian ownership rights have been specifically

16 The special concern for preserving Indian land in the Indians is evidenced in the immunity of trust lands from the traditional restrictions on recovering land such as statutes of limitation, laches, and adverse possession. As the Fourth Circuit Court of Appeals early observed:

> The determinative fact is that the federal government has assumed towards them [the Eastern Band of Cherokee Indians] the same sort of guardianship that it exercises over other tribes of Indians, from which it results that their property becomes an instrumentality of that government for the accomplishment of a proper governmental purpose and may not be taken from them by contract, adverse possession, or otherwise, without its consent. Indeed, a statute of the United States expressly forbids the acquisition of lands of any Indian tribe by purchase, grant, lease or other conveyance, except by treaty or convention and subjects to penalty anyone not being employed under the authority of the United States who attempts to negotiate such treaty. R. S. § 2116, 25 U. S. C. A. § 177.

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held to be controlled by federal law where trust land is involved.

> The nature and extent of riparian rights, if any, in the bed and banks of navigable waters is generally a matter of state law. This is a consequence of the rules that (1) the United States holds title to the bed and banks of navigable waters in trust for future states; and (2) upon admission of a state to the Union, the United States relinquishes to the state the ownership of the bed and banks of its navigable waters. The south half of Flathead Lake presents an exception. Title to the bed and banks of the south half of Flathead Lake below high water mark is held by the United States in trust for the Tribes. Thus, the basis for state determination of riparian rights is non-existent. State law, therefore, is not applicable.

Confederated Salish & Kootenai Tribes v. Namen, 380 F. Supp. 452, 461 (D. Mont. 1974), aff'd, 534 F. 2d 1376 (9th Cir.), *cert. denied*, 429 U. S 929 (1976) (citation omitted).[17]

See also United States v. Finch, 548 F. 2d 822, 832-33 (9th Cir. 1976), *vacated on other grounds*, — U. S. —, 97 S. Ct. 2909 (1977). *Cf. Bauman v. Choctaw-Chickasaw Nations*, 333 F. 2d 785, 787-89 (10th Cir. 1964), *cert. denied*, 379 U. S. 965 (1965).

(Continued from previous page)

United States v. 7,405.3 Acres of Land, 97 F. 2d 417, 422 (4th Cir. 1938) (citations omitted).

See also United States v. Candelaria, 271 U. S. 432, 440-42 (1926); *United States v. Minnesota*, 270 U. S. 181, 196 (1926); *United States v. Schwarz*, 460 F. 2d 1365, 1371-72 (7th Cir. 1972); *United States v. Ahtanum Irrigation Dist.*, 236 F. 2d 321 (9th Cir. 1956), *cert. denied*, 352 U. S. 988 (1957); *Schaghticoke Tribe of Indians v. Kent School Corp.*, 423 F. Supp. 780, 784-85 (D. Conn. 1976).

17 *See also United States v. Forness*, 125 F. 2d 928, 932 (2d Cir.), *cert. denied*, 316 U. S. 694 (1942); *Schaghticoke Tribe of Indians v. Kent School Corp., supra* at 783-84; *Narragansett Tribe of Indians v. Southern Rhode Island Land Dev. Corp.*, 418 F. Supp. 798, 804 (D. R. I. 1976).

Finding the land in dispute affects an interstate boundary at the time the controversial movements occurred, and because the Tribe's right asserted to Indian trust land arises under federal law, we hold that the governing law is federal law.

IV. *Burden of Proof*

Section 194 of Title 25 of the United States Code[18] provides:

> *Trial of right of property; burden of proof*
>
> In all trials about the right of property in which an Indian may be a party on one side, and a white person on the other, the *burden of proof* shall rest upon the white person, whenever the Indian shall make out a presumption of title in himself from the fact of previous possession or ownership.

(Emphasis added).

The trial court reasoned that application of the statute to accretion or avulsion cases would be "unreasonable and circuitous" and "inextricably entwined with the merits." The court's analysis was apparently based on the idea that to apply § 194 would require the court to presume that the land originally occupied by the Indians within the Barrett Survey is exactly the same land in place today. To do so, the court believed, would be to decide the merits and compel it to decide that the same land remained by reason of avulsive movements of the river. On the other hand, the court reasoned, if the land had washed away and new land had accreted to the Iowa riparian owners, the Indians had never "possessed" the new land and it would not be proper to apply the statute.

We reject this reasoning.

Application of § 194 is not a self-answering inquiry to the issues at hand.[19] To hold otherwise, one must presume that the reservation land has in fact been destroyed. Furthermore, the trial court's reasoning would negate the application of the § 194 statutory burden upon a pleading that simply recites Indian land had been destroyed by the erosive action of a river. Thus, under the trial court's rationale a party making claim to Indian land could defeat the congressional mandate by mere allegation without proof. We cannot accept the proposition that congressional policy can be so easily thwarted.

It is undisputed that the 1854 treaty established the Tribe as the legal titleholder to the land area within the Barrett Survey lines. This historical fact shows "previ-

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18 The defendants question the constitutionality of 25 U. S. C. § 194. In discussing the validity of laws granting special treatment to Indians the Supreme Court emphasized in *Morton v. Mancari*, 417 U. S. 535, 554-55 (1974), that:

> On numerous occasions this Court specifically has upheld legislation that singles out Indians for particular and special treatment. This unique legal status is of long standing and its sources are diverse. As long as the special treatment can be tied rationally to the fulfillment of Congress' unique obligation toward the Indians, such legislative judgments will not be disturbed.

(Citations omitted.)

See also Moe v. Confederated Salish & Kootenai Tribes, 425 U. S. 463, 479-80 (1976); *Fisher v. District Court*, 424 U. S. 382, 390-91 (1976). *Cf. McClanahan v. Arizona State Tax Comm'n*, 411 U. S. 164 (1973); *Williams v. Lee*, 358 U. S. 217 (1959); *Simmons v. Eagle Seelatsee*, 244 F. Supp. 808 (E. D. Wash. 1965), *aff'd*, 384 U. S. 209 (1966).

19 Two cases have cited § 194, *United States v. Sands*, 94 F. 2d 156 (10th Cir. 1938), and *Felix v. Patrick*, 36 F. 457 (C. C. D. Neb. 1888), *aff'd*. 145 U. S. 317 (1892), but neither case expounds upon the effect that section should be given.

ous possession or ownership" and is sufficient to raise a presumption of title in the Tribe under the statute and to place the burden of proof on the defendants. Contrary to the trial court's statement, applying the statutory burden of proof in this case does not decide the merits of the case since the fundamental issue still remains: Was there an alteration in the original boundary by reason of the marked movement of the Missouri River in the time periods involved? The defendants must bear the burden of proof that the boundary has been changed.

The early Indian Non-Intercourse Acts provided special treatment to Indian nations as the frontier was being settled. Section 194 was one of many special protective measures included in these Acts. The legislative history of the Act of June 30, 1834, 4 Stat. 729 (1846), of which § 194 was a part, clearly evidences a protectionist policy with regard to Indians.[20]

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20 Section 22 of the 1834 Indian Non-Intercourse Act, Act of June 30, 1834, 4 Stat. 733, upon which 25 U. S. C. § 194 is based, is derived from a similar provision in an 1822 non-intercourse act. See Act of May 6, 1822, § 5, 3 Stat. 683. A 1924 Attorney General's opinion uses § 194 as an example of a long established practice of safeguarding Indian rights.

> From the beginning of its negotiations with the Indians, the Government has adopted the policy of giving them the benefit of the doubt as to the questions of fact or the construction of treaties and statutes relating to their welfare. An illustration of this is found in section 2126 of the Revised Statutes (Act of June 30, 1834, 4 Stat. 733) [25 U. S. C. § 194], which provides:
>
> "In all trials about the right of property in which an Indian may be a party on one side, and a white person on the other, the burden of proof shall rest upon the white person, whenever the Indian shall make out a presumption of title in himself from the fact of previous possession or ownership."
>
> This practice of safeguarding the Indian has been continuously adhered to. Treaties have been considered,

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> The time has been when conciliation was sought; but the time is now passed when the fear of Indian hostility should be a leading feature of our Indian intercourse. Our relation to them is now that of the strong to the weak, and demands at our hands a more liberal policy, as well directed to promote their welfare as our political interests.

H. R. Rep. No. 474, 23d Cong., 1st Sess. 10-11 (1834).

The practice of safeguarding Indians in special areas of legislation continues today. *See, e. g., DeCoteau v. District County Court,* 420 U. S. 425, 444 (1975); *Antoine v. Washington,* 420 U. S. 194, 199-200 (1975).

Defendants urge that notwithstanding the failure of the court to apply § 194, the court, after placing the burden of persuasion on the defendants to establish their counter-claim, found that the defendants had in fact proven by the preponderance of evidence their title in the property.[21] Although the trial court observed that it felt no presumption[22] aided either party, the defendants'

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> not according to their technical meaning, but in the sense in which they would be naturally understood by the Indians.

34 Op. Att'y Gen. 439, 444 (1925).

21 Adoption of findings proposed by the successful litigant will be upheld where supported by substantial evidence and not otherwise clearly erroneous. However, in the present case the entire opinion of the trial court relating to the evidence and findings of fact is essentially a memorandum written by the defendants. Under the circumstances we feel compelled to repeat the admonition of the United States Supreme Court in *United States v. El Paso Natural Gas Co.,* 376 U. S. 651, 656-57 (1964):

> Those findings, though not the product of the workings of the district judge's mind, are formally his; they are

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not to be rejected out-of-hand, and they will stand if supported by evidence. *Those drawn with the insight of a disinterested mind are, however, more helpful to the appellate court.* Moreover, these detailed findings were "mechanically adopted," to use the phrase of the late Judge Frank in *United States v. Forness*, 125 F. 2d 928, 942, *and do not reveal the discerning line for decision of the basic issue in the case.*

(Emphasis added) (citations omitted) (footnote omitted).

22 Under Iowa law there is a common law presumption in favor of a finding of accretion. *Kitteridge v. Ritter*, 172 Iowa 55, 151 N. W. 1097 (1915). No such presumption exists under Nebraska law. *See Jones v. Schmidt*, 170 Neb. 351, 102 N. W. 2d 640 (1960). Whether a presumption of accretion exists under federal law is uncertain; Mr. Justice Douglas alludes to such a presumption in his dissent in *Mississippi v. Arkansas*, 415 U. S. 289, 295-96 (1974) (Douglas, J., dissenting). *Cf. Nebraska v. Iowa*, 143 U. S. 359, 369 (1892).

The existence of a presumption of accretion, however, does not affect the outcome here. Under the Federal Rules of Evidence a presumption loses its vitality once sufficient evidence on a disputed issue has been presented to permit a fact finder to act upon it. *See* Fed. R. Evid. 301; Louisell, *Construing Rule 301: Instructing the Jury on Presumptions in Civil Actions and Proceedings*, 63 Va. L. Rev. 281, 285 (1977); *Sperberg v. Goodyear Tire & Rubber Co.*, 519 F. 2d 708, 713 (6th Cir.), *cert. denied*, 423 U. S. 987 (1975); 1 J. Weinstein & M. Berger, Weinstein's Evidence ¶ 301[02], at 301-28 (1976); McCormick's Handbook of the Law of Evidence Ch. 36, § 345 (2d ed. E. Cleary ed. 1972). The Tribe having presented substantial conflicting evidence on the issue of accretion, any presumption of accretion disappeared and had no further effect on their case.

The presumption of accretion, which affects only the burden of going forward with evidence, should not be confused with the burden of proof, that is the risk of non-persuasion, found in § 194. As Professor Fleming James noted:

> The term "burden of proof" is used in our law to refer to two separate and quite different concepts. . . . The two distinct concepts may be referred to as (1) the risk of non-persuasion, or the burden of persuasion or simply persuasion burden; (2) the duty of producing evidence, the burden of going forward with the evi-

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reasoning as adopted by the trial court, erroneously focuses on the failure of the Tribe to carry a burden of proof to establish title to the land. In discussing the factual evidence, the court's opinion focuses almost entirely on the inability of the Tribe to prove that the movement of the thalweg was brought about by avulsion.[23]

We find that the trial court improperly placed the burden of proof on the Indians in the instant case. Title to the Blackbird Bend area as depicted by the Barrett Survey was presumptively shown to be in the Tribe and therefore, notwithstanding the subsequent movement of the thalweg of the Missouri River, the non-Indian claimants were required to assume the burden of proof to show that the Indians no longer had lawful title to the reservation land in question.

We now proceed to an examination of the governing principles of law.

V. *Law of Accretion and Avulsion.*

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dence, or simply the production burden or the burden of evidence.

James, *Burdens of Proof*, 47 Va. L. Rev. 51 (1961).

Section 194 is designed to allocate the burden of persuasion and not merely to affect the burden of going forward with the evidence.

23 The court observed in its opinion that:

> The plaintiffs failed to sustain their burden of proving that any sudden change of the Missouri River channel occurred in the Blackbird Bend area detaching a block of Omaha Indian Reservation land from the Nebraska bank to the Iowa bank, which land was capable of identification as such, either during the period from 1867 to 1879, 1906 to 1923, as contended by the plaintiffs, or at any other time material herein.

433 F. Supp. at 88.

It is fundamental that:

> [W]here running streams are the boundaries between States, the same rule applies as between private proprietors, namely, that when the bed and channel are changed by the natural and gradual processes known as erosion and accretion, the boundary follows the varying course of the stream. . . .

Arkansas v. Tennessee, 246 U.S. 158, 173 (1918).

See also Missouri v. Nebraska, 196 U.S. 23, 34-35 (1904); *Nebraska v. Iowa,* 143 U.S. at 360-61; *Mayor, Aldermen & Inhabitants of New Orleans v. United States,* 35 U.S. (10 Pet.) 662 (1836). Equally well settled is the proposition that

> [i]f the stream from any cause, natural or artificial, suddenly leaves its old bed and forms a new one, by the process known as an avulsion, the resulting change of channel works no change of boundary, which remains in the middle of the old channel, although no water may be flowing in it, and irrespective of subsequent changes in the new channel.

Arkansas v. Tennessee, supra at 173.

See also Missouri v. Nebraska, supra at 35; *Nebraska v. Iowa,* 143 U.S. at 361.

The trial court found that the eastern boundary of the Omaha Indian Reservation changed with the shifting river since the tribe had failed to show that the river had moved by avulsion. In reaching this result the trial court ruled that an avulsion occurs only where a sudden shift in a channel cuts off land "so that after the shift it remains identifiable as land which existed before the change of the channel and which never became a part of the river bed." 433 F. Supp. at 73. In doing so, the trial court rejected the plaintiffs' theory that the doctrine of avulsion is equally applicable when a sudden and perceptible shift of the thalweg occurs within the bed of the stream or *over* as well as around land in place. The government's evidence was that such a perceptible shift might occur when the river goes out of its bed and the land is submerged by a flood or freshet. We find the district court too narrowly focuses on identifiable land in place as the sole criterion of avulsion without giving proper weight to the plaintiffs' theory of their case and to the factual record presented.[24]

The Supreme Court has defined accretion as "an addition to land coterminous with the water, which is formed so slowly that its progress cannot be perceived. . . . " *Jefferis v. East Omaha Land Co.,* 134 U.S. 178, 193 (1890).[25] In contrast, avulsion has been said to occur in various ways. One observation is that it occurs where there is a "sudden change of the banks of a stream such as occurs when a river forms a new course by going through a bend, the sudden abandonment by a stream of

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24 The actual trial lasted over one month; the trial record constitutes 3,216 pages and includes over 150 exhibits.

25 The rule of accretion, which found its origins in Justinian's Institutes—

> Moreover, that ground which a river hath added to your estate by alluvion, becomes your own by the law of nations. And that is said to be *alluvion,* which is added so gradually, that no one can judge how much is added at each moment of time.

T. Cooper, The Institutes of Justinian, Lib. II, Tit. I, § 20 (3d ed. 1852)—

was based on the proposition that the "imperceptible nature of the acquisition" is "too minute and valueless to appear worthy of legal dispute or separate ownership." Hall, *Rights of the Crown in the Sea-Shore, in* S. Moore, A History

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its old channel and the creation of a new one, or a sudden washing from one of its banks of a considerable quantity of land and its deposit on the opposite bank."[26] III American Law of Property § 15.26, at 855-56 (1952) (footnotes omitted).

A clear distinction between accretion and the sudden and perceptible movement associated with avulsion is, however, often obscured when applied to the actual movement of uncontrolled rivers. The Supreme Court emphasized the unpredictability of the Missouri River in *Nebraska v. Iowa*, 406 U.S. 117, 119 (1972):

> [E]xperience showed that "the fickle Missouri River . . . refused to be bound by the Supreme Court decree [of 1892]. In the past thirty-five years the river has changed its course so often that it has proved impossible to apply the court decision in all cases, since it is difficult to determine whether the channel of the river has changed by 'the law of accretion' or 'that of avulsion.'" Eriksson, Boundaries of Iowa, 25 Iowa J. of Hist. and Pol. 163, 234 (1927).[27]

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of the Foreshore 793 (1888). *See also* 1 G. Baker, Halleck's International Law ch. VI, at § 25 (1908); 8 Op. Att'y Gen. 175, 177-78 (1856). Imperceptiblity, in the sense that "though the witnesses may see from time to time that progress has been made, they could not perceive it while the process was going on," *St. Clair v. Lovingston*, 90 U.S. (23 Wall.) 46, 68 (1874), is the accepted test for accretion today. *See, e.g., Littlefield v. Nelson*, 246 F.2d 956, 958 (10th Cir. 1957); *United States v. Commodore Club, Inc.*, 418 F. Supp. 311, 322 (E.D. Mich. 1976); *Schafer v. Schnabel*, 494 P.2d 802, 807 n. 19 (Alaska 1972).

26 Justinian described avulsion as follows:

> But, if the impetuosity of a river should sever a part of your estate, and adjoin it to that of your neighbour, it is certain, such part would still continue yours. . . .

The Institutes, *supra* § 21.

The early decision in *St. Louis v. Rutz*, 138 U.S. 226 (1891), illustrates an attempt at more closely defining avulsion in light of actual river conditions. The Court found that violent erosion of shoreland along the Mississippi River between 1865 and 1875 was avulsive in nature, sustaining findings that "the caving in and washing away of the same was rapid and perceptible. . . . [occurring] principally at the spring rises or floods of high water in the Mississippi. . . ." *Id.* at 231.[28]

27 The early movements of the Missouri River were described as "remarkably impetuous," flooding being common on the river.

> The regular floods are two in number, and usually occur in April and in June. The first is extremely violent and of short duration, rarely lasting over a week or ten days; it seems to come largely from the upper river. The June rise, although generally higher, is of longer duration, being influenced by local rains and the general saturation of the soil. . . . The April rise is generally the most destructive, for it shows, for a time at least, a tendency to follow the channels developed during the low water season preceding, and, as a consequence, the banks are attacked with extreme violence. . . . Both, however, have sufficient power to produce tremendous effects and bring about the most astonishing changes.

Preliminary Report Upon the Improvement of the Navigation of the Missouri River, in Annual Report of the Chief of Engineers app. S, at 1651 (1881).

28 The perceptible nature of the erosion along the bank was described as follows:

> [D]uring each flood there was usually carried away a strip of land from off said river bank from two hundred and fifty to three hundred feet in width, which loss of land could be seen and perceived in its progress; that as much as a city block would be cut off and washed away in a day or two; that blocks or masses of earth from ten to fifteen feet in width frequently caved off and fell into the river and were carried away at one time. . . .

St. Louis v. Rutz, 138 U.S. 226, 231 (1891).

Rapidity of erosion as the determinative factor in a finding of avulsion was, however, rejected in early dicta in *Nebraska v. Iowa*, 143 U.S. 359 (1892). *See also Oklahoma v. Texas*, 260 U.S. 606 (1923) (where the Court applied the rule of accretion, following *Nebraska v. Iowa*, to the Red River); *Philadelphia Co. v. Stimson*, 223 U.S. 605 (1912). Although the litigated facts of *Nebraska v. Iowa* appear to have dealt only with the movement of the Missouri River cutting across the neck of a U-shaped land formation commonly known as an ox-bow,[29] the Court expressed its view that the rapidity of the process of subtraction or addition did not prevent application of the rule of accretion.

In discussing the rules of accretion and avulsion the Supreme Court quoted, among others, Vattel, an early civil law authority. Vattel's formulation of avulsion held that "when the violence of the stream separates a considerable part from one piece of land and joins it to another, but in such manner that it can still be identified,

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29 The Court in its concluding paragraph relates:

> It appears, however, from the testimony, that in 1877 the river above Omaha, which had pursued a course in the nature of an ox-bow, suddenly cut through the neck of the bow and made for itself a new channel. This does not come within the law of accretion, but of that of avulsion. By this selection of a new channel the boundary was not changed, and it remained as it was prior to the avulsion, the centre line of the old channel; and that, unless the waters of the river returned to their former bed, became a fixed and unvarying boundary, no matter what might be the changes of the river in its new channel.

Nebraska v. Iowa, 143 U.S. at 370.

the property of the soil so removed naturally continues vested in its former owner."[30] 143 U.S. at 366.

It is obvious, however, when viewed in the context of the entire opinion, that the Court was not seeking to narrow the traditional scope of avulsion but merely to demonstrate that the rule of accretion, as traditionally defined, was equally applicable to the Missouri River. The Court, in defining avulsion, cited Gould on Waters, noting:

> It is *equally* well settled, that where a stream, which is a boundary, from any cause suddenly abandons its old and seeks a new bed, such change of channel works no change of boundary; and that the boundary remains as it was, in the centre of the old channel, although no water may be flowing therein. This *sudden* and *rapid change of channel* is termed, in the law, avulsion. In Gould on Waters, sec. 159, it is said: "But if the change is violent and visible, and arises from a known cause, such as a freshet, *or* a cut through which a new channel is formed, the original thread of the stream continues to mark

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30 It is in this context that the Nebraska cases relied upon by the district court relate that one of the significant factors of avulsion is identifiable land in place. *See Conkey v. Knudsen*, 143 Neb. 5, 8 N.W. 2d 538 (1943), *vacating* 141 Neb. 517, 4 N.W. 2d 290 (1942); *Independent Stock Farm v. Stevens*, 128 Neb. 619, 259 N.W. 647 (1935); *Iowa R.R. Land Co. v. Coulthard*, 96 Neb. 607, 148 N.W. 328 (1914). These and several other state cases—*Yutterman v. Grier*, 112 Ark. 366, 166 S.W. 749, 751 (1914); *Longabaugh v. Johnson*, 321 N.E. 2d 865, 867 (Ind. App. 1975); *Coulthard v. Stevens*, 84 Iowa 241, 50 N.W. 983, 984 (1892); *McCormick v. Miller*, 239 Mo. 463, 144 S.W. 101, 103 (1912); *Attorney General ex rel. Becker v. Bay Boom Wild Rice & Fur Farm*, 172 Wis. 363, 178 N.W. 569, 573 (1920)—which discuss identifiable land in place as one of the key factors in a finding of avulsion, all ultimately rely on either *Nebraska v. Iowa* or a Missouri case, *Benson v. Morrow*, 61 Mo. 345 (1875).

the limits of the two estates." 2 Bl. Com. 262; Angell on Water Courses, § 60; *Trustees of Hopkins' Academy v. Dickinson,* 9 Cush. 544; *Buttenuth v. St. Louis Bridge Co.,* 123 Illinois, 535; *Hagan v. Campbell,* 8 Porter (Ala.) 9; *Murry v. Sermon,* 1 Hawks (N. C. 56.

143 U. S. at 361 (emphasis added).

After *Nebraska v. Iowa* only a few federal cases have addressed the scope of the avulsion rule in a context other than an ox-bow cut-off involving permanently emerged land in place.[31] In *Veatch v. White,* 23 F. 2d 69 (9th Cir. 1927), the facts revealed that:

> Years ago, between 1859 and 1874, in the southern shore of Puget Island there was a slough running in a north westerly direction from the Columbia river. The slough, although only used by fishing boats, had a channel that was shallow and more or less filled with snags. So much of the area of Puget Island as was separated from the mainland by this slough was called Coffee Island, *which gradually became submerged.* Some time before 1894 the water of the river began to bore out and enlarged the slough, and when freshet waters of 1894 came the slough was so enlarged that a channel formed, which after 1894 was used for navigation. After this new channel was created, shoals formed to some extent on the south, or Oregon, side of Coffee Island, and navigation on that side became unsafe for deep draft ships. . . .

Id. at 70 (emphasis added).

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31 The language and expressions in the *Nebraska* v. *Iowa* decision may, as the Supreme Court of Alabama remarked, "cause some confusion unless care is had in observing them." *Greenfield v. Powell,* 220 Ala. 690, 127 So. 171, 172-73 (1930). *See also Willett v. Miller,* 176 Okla. 278, 55 P. 2d 90, 93-94 (1935).

Relying on the definition of avulsion in *Nebraska v. Iowa,* the court held that:

> [T]hough *by erosion* of Puget Island the river has widened and the center of *the old channel has been changed somewhat,* and has become more shallow than it was at the time of the fixing of the boundary of the state of Oregon, *such changes are not to be confused with changes made by the creation of the slough channel,* which was caused by sudden and known causes, not by accretion. The demarking line must therefore remain the center of the channel between Puget Island and Oregon before the avulsion.

Id. at 71 (emphasis added).

This court applied the same rationale in *Uhlhorn v. U. S. Gypsum Co.,* 366 F. 2d 211 (8th Cir. 1966), *cert. denied,* 385 U. S. 1026 (1967), where the end of a meander bend in the Mississippi River gradually became separated from the mainland area by a small channel. During a flood in 1938 the subsidiary channel was scoured out making it the main navigational channel following the flood. Relying upon *Nebraska v. Iowa,* this court, through Judges Vogel, Van Oosterhout and Mehaffy, held that, despite the fact that the bar separating the old and new channel was as much as four feet under water when the change occurred, the change was avulsive.[32] *Id.* at 219-20. The court observed:

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32 Several other decisions have also recognized that the submergence of land around or over which a channel shifts does not prevent a finding of avulsion. *See, e. g., Widdicombe v. Rosemiller,* 118 F. 295, 299 (C. C. W. D. Mo. 1902); *Fowler v. Wood,* 73 Kan. 511, 85 P. 763, 768 (1906); *Nix v. Dickerson,* 81 Miss. 632, 33 So. 490 (1903). *Cf. Mulry v. Norton,* 100 N. Y. 424, 3 N. E. 581 (1885).

> In most instances where a river changes by avultive processes, it has left intervening land above high water mark, *but we do not think the elevation of the land mass between an old channel and a new one that is cut by avultive processes is a decisive criterion for a change in a state boundary.* By all logic and reason, the boundary should not and does not change from the original thalweg except as the Supreme Court said in State of Arkansas v. State of Tennessee, supra, "by gradual process." Since there was admittedly nothing gradual here, we conclude and believe that State of Arkansas v. State of Tennessee, supra, commands that the boundary remains in the thalweg of the Bendway Channel subject to its erosion and accretions occurring prior to its stagnation and death.

Id. at 219 (emphasis added).

Several state cases have similarly recognized that the sudden, perceptible change of the channel, whether within or without the river's original bed, is a critical factor in defining an avulsion.[33]

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33 In *Eaton v. Francis*, 484 P. 2d 128, 131 (Colo. App. 1971), the court held that:

> According to the trial court's findings, which were based upon sufficient evidence and are therefore binding upon appeal, the Arkansas River moved from its old location to its new one as result of the great flood in 1921. To gain by accretion, it is necessary to show a slow imperceptible shifting of the river's course over a long period of time. A sudden violent shift or avulsion, as the court found occurred here, does not shift the boundaries of the lot to conform to the new banks of the river. Rather the lots remain the same, that is, bounded upon the old bank of the river not the new.

(Citations omitted.)

See also City of Lawrence v. McGrew, 211 Kan. 842, 508 P. 2d 930, 932 (1973); *Wood v. McAlpine*, 85 Kan. 657, 118

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Our review of the foregoing authorities leads us to conclude that, although evidence of identifiable land in place may have some probative value that erosion has not occurred, the fact that intervening land may not be visible at the time a sudden flood or freshet occurs is not conclusive in itself. [34] To reason otherwise would be to limit

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P. 1060 (1911); *Fowler v. Wood*, 73 Kan. 511, 85 P. 763 (1906); *Sharp v. Learned*, 195 Miss. 201, 14 So. 2d 218, 220 (1943); *Bode v. Rollwitz*, 60 Mont. 481, 199 P. 688 (1921); *Nolte v. Sturgeon*, 376 P. 2d 616, 619-21 (Okla. 1962); *Buchheit v. Glasco*, 361 P. 2d 838, 841 (Okla. 1961); *Harper v. Holston*, 119 Wash. 436, 205 P. 1062, 1064 (1922). *Cf. Costal Indus. Water Auth. v. York*, 532 S. W. 2d 949, 952 (1976); *Jourdan v. Abbott Constr. Co.*, 464 P. 2d 311, 314 n. 3 (Wyo. 1970).

34 Both state and federal case law also recognize an exception to the accretion rule where a stream moves gradually around or jumps across a land area, thereby markedly altering the river's channel. The rule in these cases, sometimes known as "the island rule," has not been confined to islands. In *Davis v. Anderson-Tully Co.*, 252 F. 681, 685 (8th Cir. 1918), the court applied the principle to a peninsula and observed:

> To the rule stated in this clause there is a well-established and rational exception. It is that when a navigable stream changes its main channel of navigation, *not by creeping over the intermediate lands between the old channel and the new one, but by jumping over them or running around them and making or adopting a new course*, the boundary remains in the old channel subject to subsequent changes in that channel wrought by accretion and erosion while the water in it remains a running stream, notwithstanding the fact that the change from the old channel to the new one was wrought gradually during several years by the increase from year to year of the proportion of the waters of the river passing over the course which eventually became the new channel, and the decrease from year to year of the proportion of its waters passing through the old channel until finally the new channel became the main channel of navigation.

(Emphasis added.)

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the rule to the rare situation involving only an *obvious* neck cut-off where intervening land is not submerged. The history of the rule, the case law developed under it, and the policy underlying the doctrine all support a broader application.[35]

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See also Washington v. Oregon, 211 U. S. 127, 134-36 (1908); *Missouri v. Kentucky*, 78 U. S. (11 Wall.) 395, 403-11 (1870); *Commissioners of Land Office v. United States*, 270 F. 110, 113-14 (8th Cir. 1920), *appeal dismissed*, 260 U. S. 753 (1922); *State v. Ecklund*, 147 Neb. 508, 23 N. W. 2d 782, 789-90 (1946).

35 One author has noted that changes or movements of rivers may be divided into three basic categories: (1) gradual changes *in the river* caused by erosion and accretion; (2) sudden changes *in the river* caused by erosion and avulsion without cutting a new bed; and (3) where the river itself cuts a new bed. In discussing these changes, Professor Bouchez explored the policy rules behind boundary river principles:

> When an alteration in the boundary river has been caused by a gradual process of erosion and accretion, the best solution is the adjustment of the boundary to the changed situation. Such a procedure will mean the functional meaning of the thalweg boundary will be maintained. In addition the damage caused to one of the States by slight alterations will generally be of minor importance. Damage arising from slight alterations will not continuously affect in the long run only one of the riparian States.
>
> The second category of alterations is a more difficult problem. Maintenance of the boundary as it existed before the alteration of the thalweg will abolish the functional meaning of the thalweg boundary. If on, the other hand, the boundary follows the new thalweg serious damage may be caused to one of the riparian States. An example of such a situation is the Chamizal tract. The interests of the State put at a disadvantage by the instantaneous alterations of the thalweg must be considered as the dominant factors in order to find an equitable solution.
>
> If the injured State is primarily interested in navigation the new thalweg is perhaps the best boundary. If the area, which has been partly destroyed or seriously

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In *Bonelli Cattle Co. v. Arizona*, 414 U. S. 313, 327 (1973), *overruled on other grounds, Oregon ex rel. State Land Board v. Corvallis Sand & Gravel Co.*, 429 U. S. 363 (1977), the Supreme Court explained:

> The rationale for the doctrine of avulsion is a need to mitigate the hardship that a shift in title caused by a sudden movement of the river would cause the abutting landowners were the accretion principle to be applied.[36]

Undisputed historical data relating to the early movements of the Missouri River make clear that the wild and uncontrolled movements of the river did not occur with mathematical precision or follow predictable paths. In fact, as the voluminous testimony and documentary evidence presented by both sides reveal, accretion and avulsion are interrelated phenomena often occurring to-

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> damaged by the alterations of the thalweg, is of vital importance for a State, the maintenance of the old boundary is to be preferred.

Bouchez, *The Fixing of Boundaries in International Boundary Rivers*, 12 Int'l & Comp. L. Q. 789, 808 (1963).

36 The statement in *Bonelli* followed from earlier authorities which similarly emphasized the inequities that would arise were the rule of avulsion not available.

> [I]f the change does not come within the definition of gradual and imperceptible, but the land is rapidly washed away on one side and formed on the other, the fiction should give way to the fact, and the owner should not lose title to his property. The title to the land itself is of more importance than the riparian right of access to the water or convenience of having a natural, rather than a mathematical, boundary; and rules which were made for convenience should not be permitted to wrest the title to land from its true owner.

3 Farnham on Waters § 848, *quoted in Fowler v. Wood*, 73 Kan. 511, 525, 85 P. 763, 768 (1906).

gether and in fact often acting as the motivating force for each other. Erosion and accretion, for example, may change the angle at which a river attacks a downstream bank, increasing the likelihood of an avulsive cut-through. Erosion may narrow the neck of a meander bend producing the necessary conditions for an ox-bow cut-off. Or, as the government asserts, an avulsion can produce river characteristics such as low river current energy areas which are favorable to rapid deposition.

When weighed with the significant policy considerations involved, we hold that, under governing principles, the critical determinant of avulsion is a sudden perceptible shift of the channel.[37] Only where the thalweg gradually moves through the intervening land as a direct consequence of erosion *and* the imperceptible process of accretion to the forming bank do the policies underlying the accretion and avulsion rules justify altering permanent land boundaries to conform with the gradually changing thalweg.

In the present case the plaintiffs claim that a sudden and unusual jump in the thalweg within the bed of a

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37 Another form of avulsion, of course, is recognized in the highly unusual case where identifiable land is visibly torn from one bank and carried downstream to a resting place. The Supreme Court, however, in *Nebraska v. Iowa*, noted that this type of avulsion could not occur on the Missouri River.

> No engineering skill is sufficient to say where the earth in the bank washed away and disintegrating into the river finds its rest and abiding place. The falling bank has passed into the floating mass of earth and water, and the particles of earth may rest one or fifty miles below, and upon either shore.

143 U. S. at 369.

Cf. St. Louis v. Rutz, 138 U. S. at 249-51.

stream or over, as well as around, land (submerged or not) invokes the doctrine of avulsion and its corollary rule that the boundary does not change with the shift of the thalweg. The trial court in rejecting this theory held that a sudden and unusual (erratic) jump or movement of the thalweg without evidence of identifiable land in place falls within the historical rule of accretion. We find this ruling inconsistent with settled principles governing the rule of accretion and the broader parameters involving the doctrine of avulsion. We therefore conclude that it was error for the trial court to reject the plaintiffs' legal theory in its evaluation of the evidence.

We now turn to the factual findings of the district court.

VI. *The 1875-1879 Movement of the Thalweg.*

The basic finding essential to the defendant's case is the trial court's statement that "the original Omaha Indian reservation land within the 1867 Barrett Survey has subsequently been washed away by the Missouri River . . . and that at the same time new land was added to the Iowa riparian land . . . by the gradual process of deposition within the Blackbird Bend area . . . ." 433 F. Supp. at 88. In reviewing this finding our task is not made easier by the district court's verbatim adoption of the defendant's analysis of the evidence and proposed findings of fact including the defendants' credibility assessments of the witnesses.[38] We

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38 The trial court did, however, express a caveat near the end of its opinion, that "certain findings of fact, even if agreed upon, would not lead in the minds of all parties concerned to a definite legal conclusion; *i. e.*, that either an avulsion

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hold the trial court's conclusion to be clearly erroneous and not supported by substantial evidence.

The defendants' proof, and the trial court's conclusion that erosion and accretion produced the movement in the river between 1875 and 1879, rest essentially upon six factual premises. First, defendants assert that bar A (*see* Plate II) must have been of recent origin (not land in place) since it was situated in the area formerly occupied by the old channel and because willows were the only vegetation growing on the bar. Thus, they contend that the river must have eroded the meander lobe and through the process of accretion deposited the crescent shaped sand bar depicted as bar A during its westward movement. The defendants next point to expert testimony that the remnant channel between bar A and the easterly high bank is a "common phenomenon" associated with erosion and accretion. Such channels are produced, they assert, when a river gradually moves away from its previous channel by the process of erosion and accretion. The accretive deposition then closes the old channel at its upper end forming the remnant channel. Third, defendants' experts assert that bars B and D shown on the 1879 map could not have been identifiable land in place since they were barren of vegetation. Instead, they suggest that the bars were middle sand

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or an accretion took place at key times in history at particular places on the Missouri River." 433 F. Supp. at 89. The district court nonetheless concluded that it was "convinced that one particular set of conclusions can be squared with the evidence far better than other proposed conclusions." *Id.* Notwithstanding its rejection of the Tribe's or the government's broader approach to the doctrine of avulsion, the court conceded that it was "apparent that the movements of the Missouri River have not been so clean and precise that they easily fall into the legal categories conveyed by the terms 'accretion' and 'avulsion.'" *Id.*

bars formed behind the southerly and westerly migration of the river. Defendants further contend that since no cottonwood trees, which grow only on land that is stabilized and not subject to frequent inundation, were shown to be growingon bar C, the bar must have been completely eroded away as the river moved. Defendants also find suport for their accretion theory in the opinion of one of their experts that the parallel positioning of bars A, B, C and D was consistent with a gradual southwesterly movement of the river as a result of erosion of the meander lobe. Finally, the defendants introduced the experiments of Captain J. F. Friedkin[39] into evidence which, along with hydrologic experience, allegedly showed "that during high water flows, the river will flow and erode against the upper side of a point bar . . . ."[40]

The court concluded on the basis of this evidence that the meander lobe was eroded away as the channel moved over the area where the lobe had existed. Thus, the court ruled that the shift in the course of the river was a consequence of progressive scour and deposition, that is by accretion. 433 F. Supp. at 77-78.

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39 Captain J. F. Friedkin of the United States Corps of Engineers from 1942 through 1944 conducted one of the pioneering studies of river hydrology.

40 Defendants' expert witness, George R. Hallberg, Chief of the Research Division of the Iowa Geological Survey, testified that every meander bend has a maximum width. Once the river reaches the maximum width it becomes more efficient for it to flow over the inside of the bend, and erode across the point bar, thereby decreasing the width of the bend. This process occurs at constant discharge rates; and accelerates at high discharge. Hallberg theorized that some time between 1867 and 1875 Blackbird Bend reached its maximum width and the thalweg began flowing against the meander lobe.

Our analysis of the record leads us to conclude that the evidence presented at trial as a matter of law was insufficient to satisfy the defendants' burden of proving by the preponderance of the evidence that erosion and accretion were responsible for the significant shifts of the river between 1875 and 1879.

A. *Identifiable Land in Place.*

The years from 1875 through 1879 were years of extremely high water flow on the Missouri River; no other four year period equaled or exceeded the maximum discharge for those years.[41] Defendants' experts agreed that during this time the meander lobe was low, at times entirely under the surface of the moving river and extremely vulnerable. This is corroborated by Barrett, who in his 1867 survey described the eastern end of the meander lobe as a low sandy point.

Recognizing that identifiable land in place may in given circumstances have probative value in helping to distinguish between accretion and avulsion, that is, at least in the sense of determining whether intervening land has been completely eroded or not, little significance can be attached to its alleged absence under the evidence adduced in the present case. The defendants urge that absence of identifiable land in place provides the necessary inference of erosion of the original reservation land. However, the trial court's finding that in 1879 bar A was of recent origin and was not identifiable land in place does

41 In 1875 there was a discharge of 140,000 cubic feet per second. In the next four years, the maximum discharges recorded were 300,000, 200,000, 215,000 and 220,000 cubic feet per second.

not afford a permissible inference that the original reservation land had been eroded since, as the trial court itself pointed out, at least part of bar A was located within the area of the old abandoned channel. No land could be eroded if it never existed in the first place. Under the circumstances it is obvious that bar A is nothing more than land formed by deposition after the channel was abandoned.

The evidence that bar D and part of bar B, lying to the west of bar A, and inside the Barett Survey lines, were not identifiable land in place is equally inconclusive. It is conceded that the eastern end of the Barrett Survey was made up of sandy material. Thus, even if the river changed by avulsive movements through the end of the meander lobe, the land remaining in place would have been low and composed of sand.[42]

The trial court also found that the land which had previously occupied the area shown as bar C on the 1879 map had been completely eroded away and that bar C had formed thereafter as a middle bar as the thalweg moved to the west. The court observed: "If bar 'C' were land-in-

42 Barrett described the area in 1867 as follows:

> Fractional Township 24 N. R. 11 East, the 6th Principal Meridian, is a low, sandy point, subject to frequent inundations from the Missouri River.
>
> Except a few small cottonwood trees and some willows, there is almost no vegetation upon it.
>
> The Missouri River is constantly changing its banks, so that no permanent corners can be established near the water; indeed, except where there are bearing trees, none of the corners in this Township will probably remain longer than the first high freshet in the Missouri.
>
> Small quantities of coal were deposited in the several mounds as per instructions, but the sandy soil will not prevent it from being washed away.

place which had existed prior to 1879, it would have supported the growth of cottonwoods or other vegetation more substantial than wilows by 1890."[43] 433 F. Supp. at 77. Although it is possible that the land represented by bar C may have completely eroded, it is entirely speculative to say that that is what occurred. The record also supports the possibility that bar C, located on the eastern end of the lobe, was the same surface area described by Barrett in his notes and was not built up by accretive deposits. The record is insufficient to prove what actually occurred.

Under defendants' accretion theory bar C would of necessity have been comprised of relatively newly deposited soil since it was located close to the 1879 position of the thalweg. Nevertheless, the record shows that willows were growing on bar C in 1879 indicating, as Dr. McQuivey, a government witness, theorized, that the bar may well have been land in place.[44] The fact that cottonwoods were not also growing on the bar does not prove the contrary. Bar C, along with bars B and D, was located near the eastern end of the Barrett Survey which Barrett described as sandy soil and frequently inundated. Testimony in the record shows that cottonwoods did not thrive in areas subject to frequent inundation. We find the evidence concerning bar C to be highly conjectural and inconclusive as to whether

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43 The 1890 reference is confusing and in obvious error. The area where bar C was located in 1879 is depicted on the 1890 map as "cleared" land.

44 The government urges that the vegetation appearing on bar C is inconsistent with the theory of accretion since, if the land had in fact been washed away, it would have been the last of the visible bars to have formed and the last to develop vegetation.

it formed by accretion or was in fact identifiable land in place.

There exists another basic reason why we regard the evidence of the defendants as insubstantial. The opinion of the defendants' experts[45] that no identifiable land remained in place after the movement of the river sometime between 1875 and 1879 is essentially based upon inferences drawn from the 1879 map admittedly prepared in a 10-day period during the June rise of the Missouri River when the river was a much as five feet above its ordinary high water level. At the time the river was shown to be nearly 10,000 feet wide, whereas in 1875 the bed had been only approximately 800 feet across. Soundings taken at that time demonstrate that a substantial land area was immediately below the surface of the flood water. The defendants do not contend that the river bed permanently expanded to 10,000 feet as shown in 1879; it obviously would be much narrower upon subsidence. *See, e.g.*, the 1890 Missouri River Commission Map, set out as Plate V, *infra*, in which the river is shown to be no more than 3,500 feet wide. The existence or nonexistence of identifiable land in place could not have

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45 Each of the defendants' experts viewed the existence of identifiable land in place as an essential factor in defining avulsion. Raymond L. Huber, a supervisory civil engineer employed by the Corps of Engineers, stated that

> avulsion is the transfer of the piece of land from one bank of the river to the other bank of the river, which occurs in such a manner that you can follow the movement of that transfer of land and identify it as the identical land which formerly existed on the other bank, beyond any power of question.

John F. Kennedy, a professor in the Division of Energy Engineering at the University of Iowa, and director of the Iowa Institute of Hyrologic Research, a division of the University

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been accurately assessed at a time when the river's flow was abnormally high during floods which completely inundated the adjacent land. Thus, any inferences drawn from the alleged land forms exhibited on the 1879 map appear to be highly conjectural. Substantial evidence cannot be based upon an inference drawn from facts which are uncertain or speculative and which raise only a conjecture or possibility.[46] *See Polk v. Ford Motor Co.*, 529 F. 2d 259,

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of Iowa College of Engineering, defined avulsion as "the river shifting from one side of a block of land to the other leaving the intervening land undisturbed in the process." Finally, Dr. George R. Hallberg testified that:

> Avulsion is a term I don't use technically. But from much of my work, what I understand avulsion to mean is a very sudden perceptible movement which would cut off and abandon a river and leave the land contained by that old channel essentially intact.

46 Wigmore in his treatise on evidence notes that while one inference may properly be built on another inference, 1 J. Wigmore, Evidence § 41 (3d ed. 1940), there is a limit to proof offered in this manner. As an example of the correct method of treating inferences Wigmore quotes from the case of *New York Life Ins. Co. v. McNeely*, 52 Ariz. 181, 79 P. 2d 948 (1938), in which the court observed:

> "It is true, of course, that in everyday life, all men frequently act as the result of the repeated piling of inferences upon inferences, and, as a matter of strict logic, if an inference has any probative value whatever in aiding one to determine the ultimate question of fact, it should be considered. The principle which is applied by the average man in his own private affairs usually is that no matter how many inferences are piled on each other, it is only necessary that each successive inference should be more probable than any other which might be drawn under all the circumstances. The Courts, however, have always insisted that the life, liberty and property of a citizen should not be taken away on possibilities, conjectures, or even, generally speaking, a bare probability."

1 Wigmore, *supra* § 41, at 439.

271 (8th Cir.), *cert. denied*, 426 U. S. 907 (1976); *Wilson v. Volkswagen of America, Inc.*, 561 F. 2d 494, 517 n. 65 (4th Cir. 1977); *Padgett v. Buxton-Smith Mercantile Co.*, 262 F. 2d 39, 41 (10th Cir. 1958); *Gilbert v. Gulf Oil Corp.*, 175 F. 2d 705, 709 (4th Cir. 1949).[47] As this court indicated in *Uhlhorn v. U. S. Gypsum Co.*, 366 F. 2d at 219-20, if land over which a channel changes during abnormal high water periods, inundating all intervening land masses, is identifiable as the same land mass upon subsidence of the high water, the boundary does not change even though the land's surface may be somewhat eroded.

Defendants' experts also relied upon inferences drawn from the existence of remnant channel formations, from the parallel positioning of bars A, B, C and D and their interpretation of applicable principles of hydrology. The record, in our judgment, requires us to give little or no probative effect to the ultimate conclusion reached from these factual premises.

B. *Remnant Channels.*

The defendants rely on evidence of remnant channels in the Blackbird Bend area as a "common phenomenon" associated with the progressive and gradual movement of a channel as a result of accretion. However, this evidence was proffered only as a possible alternative explanation to

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47 *Cf. Logsdon v. Baker*, 517 F. 2d 174, 175 (D. C. Cir. 1975), where the court held that reliance on "brake marks" purported to be visible in photographs but which could not be discerned by the district judge or the appeals court was held to be an inadequate basis for an expert opinion on the cause of an accident since the expert's opinion would be "too speculative."

the plaintiffs' evidence that the remnant channel areas demonstrated avulsive changes in the thalweg.[48]

The evidence further reflects that Dr. John F. Kennedy testified that, as the thalweg shifted to the west, the low energy level of the river in the former channel created by the movement would result in deposition there. The defendants conclude from this that the shift in the river was "a consequence of progressive scour and deposition." The testimony of defendants' expert, Dr. Kennedy, showed, however, that the shift of the thalweg is often the responsible agent for the "subsequent diminished sediment transport capacity of the water." Thus, the testimony is inconclusive as to whether the remnant channel was formed by accretion or avulsion since a remnant chute might also have been formed after the thalweg suddenly and perceptibly moved. In the latter case the deposition forming the remnant channel would be the effect of the low river energy in the area brought about by the sudden avulsive shift of the thalweg rather than a consequence of accretion. As the Supreme Court observed in *Arkansas v. Tennessee*, 246 U. S. at 175,

48 The Tribe and the government substantiated their argument that the remnant channels were more consistent with avulsive than accretive movement by presenting evidence of soil samples taken in the area immediately to the east of the Barrett Survey line which showed concentrations of silt and clay in the remnant channels. Concentrations of silt and clay were said by plaintiffs' experts to be inconsistent with the gradual, imperceptible, and progressive action associated with accretion which was said to produce more uniform deposits. The defendants attempted to refute this by testimony that the remnant channel was cut off at the top by formation of a point bar and alluvial deposits would therefore not reach the channel.

> if the stream leaves its former bed and establishes a new one as the result of an avulsion, the boundary remains in the middle of the former channel. An avulsion has this effect, whether it results in the drying up of the old channel or not. So long as that channel remains a running stream, the boundary marked by it is still subject to be changed by erosion and accretion; but when the water becomes stagnant, the effect of these processes is at an end; the boundary then becomes fixed in the middle of the channel as we have defined it, *and the gradual filling up of the bed that ensues is not to be treated as an accretion to the shores but as an ultimate effect of the avulsion.*

(Emphasis added).

None of the explanations for the remnant channels are, however, more than sheer conjecture and do not, under the factual circumstance shown here, constitute probative evidence of whether the movement occurred by either accretion or avulsion.[49]

C. *Bar Formation.*

Just as the remnant channels may have formed as the effect of an avulsion rather than as the result of accretion, the parallel positioning of bars A, B, C and D, while perhaps characteristic of accretion, could have resulted from the accretion which followed as an effect of avulsion as well. Moreover, as we have discussed the actual surface positioning of those bars based on the 1879 map is conjectural since the contours were drawn at the high water stage which existed at that time.

49 *See Galloway v. United States*, 319 U. S. 372, 386-87 (1943). Raymond L. Huber, one of defendants' witnesses, conceded that, given the factual basis available to him, he was only able to give an "educated guess" as to what caused the river to move between 1875 and 1879.

D. *Captain Friedkin's Experiments.*

The final proofs which defendants and the trial court relied on to establish accretion as the cause of the river's movement were Captain Friedkin's experiments and general principles of hydrology. Both Friedkin's experiments and principles of hydrology, however, provide strong evidence that avulsive change may have produced the 1879 movement. Friedkin noted that when a meander bend reaches its limiting width,[50] as it is conceded Blackbird Bend had here, it does not stop caving its banks. Instead, "[t]he flow short-cuts over the convex bars of bends, chute channels form, and a new bend developes a little farther downstream." J. Friedkin, Meandering of Alluvial Rivers 14 (1945) (footnote omitted). Such chute channels[51] are avulsive since the channel moves around or over, not imperceptibly through the interjacent land. One of the defendants' witnesses, Dr. George R. Hallberg, testified that it was quite possible that chutes similar to those described by Friedkin could have formed along the eastern edge of Blackbird Bend, although he felt the area was probably submerged when this occurred. Hallberg's testimony concurred with the government's expert, Dr. Paul McQuivey, a research hydrologist, who testified that, when a river is at high flow it tends to increase its radius, that is, it tends to

50 The limiting width of a meander bend is the maximum distance the river will travel away from the general direction of a river's flow. *See* J. Friedkin, Meandering of Alluvial Rivers 14 (1945).

51 A chute channel is defined as "a channel across a bar or a pointway channel. It differs from a cut-off, wherein a river cuts through a narrow neck which has been developed between the upper and lower arms of a bend." *Id.* n. 1.

take a more direct course rather than a meandering one.[52] To do so, he continued, the thalweg moves to the inside of the bend, and erodes new chute channels[53] through the point bar. Eventually, the record shows, one of the chute chan-

52 Dr. Kennedy, defendants' expert, verified McQuivey's testimony in observing that "[d]uring these extreme inundations, the channel, of course, likes to take a shorter path."

53 The fact that during high water a river's flow tends to move to the inside of a meander bend was substantiated by the defendants' witness Huber who testified:

> I will show you an example of a chute cut-off. Take the example of Tieville Bend, which is just below the Blackbird Bend area, below the Barrett Survey—
>
> . . . .
>
> Now, there was a shore chute which had never entirely dried up, had some flow, so that in the high water period of 1943 and later again in 1952 the velocity across this area from the upper end to the lower end of the chute was so great as compared with the velocity around the old bend that it caused some filling of the old channel and it caused a new channel to develop.
>
> Essentially this channel filled up at the upper end to the point that I believe you can walk across it. The lower end is still open, so this would be a chute avulsion.

Huber also pointed out that:

> In a very low stage there is insufficient hydraulic energy for the river to cut across any sandbars with the velocity of two or three miles to an hour—two or three miles an hour, I said, so that it has to follow the easternmost high bank. Then as the stage increases up to flood stage, which could be even up to ten miles an hour, a channel will then seek the shorter path across the area, across the bare peninsula, and develop a new channel west, which will be even deeper than the channel against the main bank, for the reason that you have greater bed scar [sic; should read scour], you have greater discharge.

nels becomes large enough to carry the main flow of the river, and the river abandons the old channel.[54] *Cf. Veatch v. White*, 23 F. 2d at 70.

In addition to the evidence suggesting that the movement of the river in 1879 could have occurred through a series of chute channels, the evidence also suports the possibility that during this same time a cut-off could have occurred across the neck of Blackbird Bend.[55] Friedkin also described the conditions when a cut-off is likely:

> Natural cut-offs occur when a meandering river develops and finally erodes through a narrow neck between the upper and lower arms of a bend. . . . In over 50 laboratory streams in uniform materials not a single cut-off of this type developed. This fact indicates that natural cut-offs result from local differences in the erodibility of bank materials.
>
> . . .
>
> With all bends in a meandering river migrating down the valley at the same rate, a cut-off cannot possibly develop. The upper arm of a bend never catches up with the lower arm. For a natural cut-off to develop, erosion on the down-stream bank of the lower arm of a bend must be slower than along the upper arm. Generally, when a cut-off develops, erosion in the bend proper has taken place so that the flow in the lower arm of the bend has become directed up-valley . . . and a narrow neck has developed. It is, therefore, indicated that it is the local differences in erodibility of the bank materials in natural rivers which cause narrow necks to form and cut-offs to develop.

Friedkin, *supra* at 16.[56]

There exists strong corroborative proof of such occurrences from Barrett's field notes made during his 1867 survey. He wrote:

> Until very recently, appearances indicated that this point was increasing in size from the deposits and drift of the river; but, during the present season, the river, rising to a great height, partly worked a channel across it, which may, eventually, entirely detach it from the Nebraska shore, rendering it an island in the river.

Tribe exhibit 26E, at 6.

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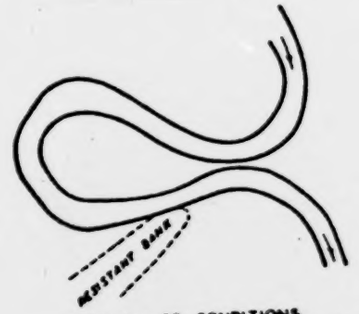
54 McQuivey pointed out several remnant channels in the area of the peninsula.

55 In *United States v. Flower*, 108 F. 2d 298 (8th Cir. 1939), the court found a neck cut-off had occurred only a few miles above Blackbird Bend in 1916 after the river had formed a very wide meander bend.

56 Friedkin provides the following illustration of the circumstances which promote natural cut-offs.

DEVELOPMENT OF
NATURAL CUT-OFF



SKETCH OF CONDITIONS
JUST PRIOR TO NATURAL CUT-OFF

Friedkin, *supra* plate 25.
An examination of Tribe Exhibit 96, an 1875 map of Monona County, Iowa, shows a narrowing of the meander bend in the area between sections 29 and 30 which closely resembles Friedkin's sketch.

The evidence also demonstrated that the Iowa south bank of the Blackbird Bend area was composed of erosion resistant material which would have prevented the southerly movement of the meander bend and made a cut-off possible. *Cf.* Friedkin, *supra* at 16-17.[57] In addition, the record shows that the potential for breakthroughs in the 1875 through 1879 period was enhanced by high water flows during those years.[58]

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57 In the years immediately prior to 1879 the north and south banks of the Blackbird Bend meander lobe had considerably narrowed. Noting this condition, Dr. Robinson testified that:

> [F]rom a study of river morphology we can predict that something is about to happen. The river is out of balance with its environment and it's because of this resisted layer at the south that does not allow the classic of the wood where we have homogeneous materials throughout the river to move south.
>
> . . . .
>
> I would predict if I were in a study that there would be a point bar cut-off or a shoot [sic] developed through there that would develop into the main channel of the river and we would have an abandonment of the 1875 channel and the development of a new channel on a shorter and straighter course between the two limbs of the meander.

58 Studies made by the Corps of Engineers received in evidence also lend support to the concept that channels often change location precipitously in both high and low stages. The report reads:

> During flood stages the general movement of sand is in a measure arrested on the shoals, and, as a consequence, the low-water channels leading through them are silted up, while new ones are developed which accommodate the high-water flow. As the river falls these latter channels are silted up, and the water ponds up behind the bar until sufficient head is attained to force a breach through the crest at one or several points. . . .

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Based on the foregoing analysis we find the factual predicate, supporting defendants' theory as the causative reason for the river's movement, is in large part conjectural and the opinions drawn therefrom must be viewed as speculative. Under the circumstances we hold that the defendants have failed to meet their burden of proof that the significant and marked changes of the Missouri River between 1875 and 1879 were the result of erosion and gradual imperceptible accretion to the Iowa bank.

VII. *The River Between 1879 and 1912.*

In 1881 the highest flood waters of any time since reliable records have been kept occurred on the Missouri River. However, no maps were introduced to show the location of the river between 1879 and 1890. The next map available after 1879 is the 1890 Missouri River Commission map, *see* Plate V, which shows the thalweg to have moved north and somewhat to the east of its 1879 location. Significantly, the river is shown to occupy far less area than that shown on the 1879 map and the land to the east of the

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> During the course of the low-water season the main channel keeps shifting from one subsidiary channel to another; these changes of location are often very great, and the uncertainty thereon attendant forms one of the greatest drawbacks to navigation. The high-water channels, before alluded to, are, in the Missouri, of the same general character as those of low-water, but they rarely coincide with them. They are less tortuous as a rule, but not of much greater depth, and they are liable to the same rapid changes of location.

Preliminary Report Upon the Improvement of the Navigation of the Missouri River, in Annual Report of the Chief of Engineers app. S, at 1655 (1881).

thalweg is shown as stabilized soil with permanent vegeta tion growing on it.

The trial court felt these facts "simply [show] the normal and logical progression of the accretion which was shown to be forming in 1879 . . . ." 433 F. Supp. at 79. There exists no factual predicate whatsoever to support this conclusion.[59]

After 1890 the river moved in a northerly and easterly direction to a position shown as the northerly high bank in approximately 1912. *See* Plate III.

We now turn to the trial court's findings and the factual discussion involving the marked change in the course of the river between 1912 and 1923.

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59 Assuming that the 1890 map shows stabilized accretion land, as the district court found, it is plausible that the "accretion" may have formed from deposition of sediment resulting from a sudden and perceptible shift of the thalweg.

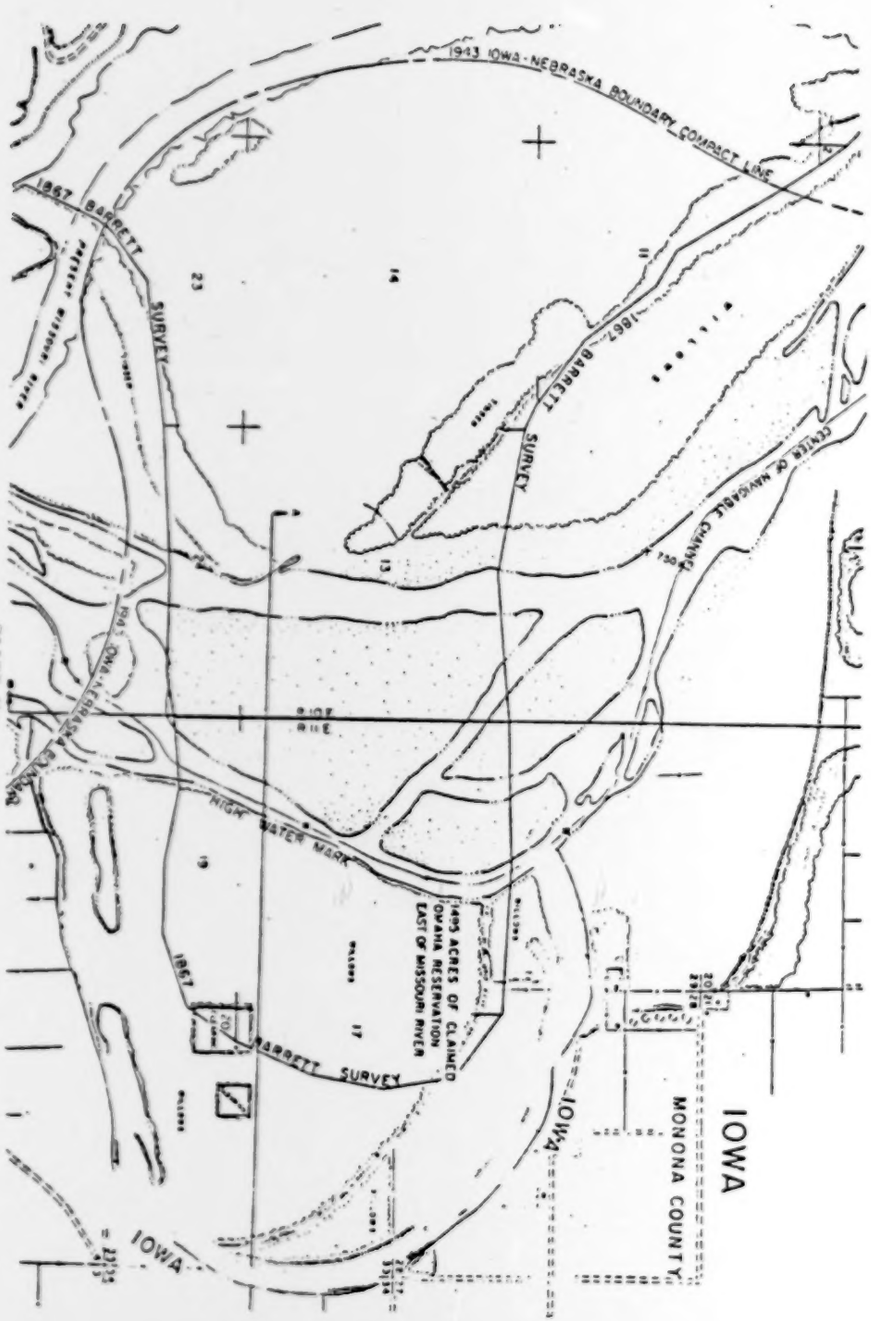

PLATE V

Omaha Indian Tribe reconstruction of the 1890 Missouri River Commission Survey.

VIII. *The 1912-1923 Movement of the Thalweg.*

The trial court found, again relying upon the defendants' analysis of the evidence, that the 1912 through 1923 movement of the Missouri River was also a direct result of erosion and imperceptible accretion to the Iowa riparian land. The court concluded:

> [T]he Court finds that there were no avulsions in the Blackbird Bend area between 1890 and 1923, and that the movements of the river during that period of time were erosive in nature so that accretion was being formed on the side of the river opposite the erosion. The Court finds that after 1890 the river moved erosively until it reached what is now the northerly high bank following which it commenced a southern migration throughout the Blackbird Bend area until it reached its 1923 position. This migration eroded almost all of the westerly end of the land as surveyed by Barrett in 1867 and the deposition which occurred during the southerly migration of the river was accretion to the northerly and easterly high banks and thereby became accretion to the Iowa riparian owners.

433 F. Supp. at 85.

The defendants contend that the river moved in a slow progressive movement south and westward to bring about the remarkable change in the thalweg between 1912 and 1923. *Compare* Plate III with Plate IV. The basic disagreement between the experts for both sides still exists. The defendants' experts — Hallberg, Kennedy, and Raymond L. Huber — testified that sometime around 1912 the river moved away from the northerly high bank and began to erode to the south depositing accretion material to Iowa riparian land. It was their theory that all of the land in the path of the river was eroded away. On the other hand,

the plaintiffs' experts varied in their appraisal of the river movement during this period. Elmer M. Clark, an aerial surveyor, believed that the river achieved its 1923 position by one or more sudden and noticeable movements of the channel. Plaintiffs' witness, Dr. Charles S. Robinson, a geologist, thought the southward movement occurred suddenly during one high water period in a matter of a few days or months. Dr. McQuivey, the government's expert, felt that the river moved as a result of several avulsive point bar cut-offs.

In reviewing the record, we cannot but echo the words of witness Huber, that it is again only an "educated guess" as to just how the river moved. The extremely speculative assessment of the reasons for the river's movement offered by the defendants is not sufficient to sustain their burden of proof.

The evidence relied upon by the defendants, and the court in reaching its conclusion that accretion caused the 1912-1923 river movement, falls essentially within four areas of discussion. First, the defendants' experts point to evidence of the absence of identifiable land in place. This evidence consisted of testimony from witnesses who had lived in the Blackbird Bend area at the time of the movement that the land on the Iowa side was "new accretion land." Defendants' witnesses also pointed out that there were no geologic or geomorphic formations evident that were typical of avulsive river movement. In addition, the

defendants alleged that no trees could be found which predated the movement away from the northerly high bank.[60]

Second, defendants' experts asserted that a change in the Missouri River above Blackbird Bend altered the angle of approach of the river into Blackbird Bend ultimately producing a southerly migration of the river. In support of this point the defendants introduced in evidence a 1912 survey showing a developing sand bar on the Iowa shore (referred to as the Fairchild sand bar) said to be consistent with a changed angle of entry. The defendants' witnesses also contended that hydrological principles would predict erosive changes in the river as a result of the change of the angle at which the river entered Blackbird Bend. Complimenting this proof were several Indian allotment letters which documented erosion in the northwestern part of the Blackbird Bend meander lobe at a point opposite the formation of the Fairchild sand bar.[61]

Third, topographic cross-sections prepared by Dr. Hallberg showed that the land surface gradient in the Blackbird Bend area sloped from northwest to southeast, and that

60 The testimony related to the existence of trees as proof of identifiable land in place was conflicting. Two trees predating the 1912 movement were identified by the Tribe's witness George S. Gorsuch, a forester with extensive experience in dendrochronology (the study of time-span within trees). The defendants contended, and the trial court found that these trees were located on the edge of a sandbar that had allegedly built south of the northerly high bank prior to 1912. However, the contours of the sandbar were never surveyed and its exact location could not have been ascertained.

61 The allotment letters concerned requests by certain members of the Omaha Tribe that their land allotments be exchanged for new allotments because the land originally allotted them was being or had been washed away by the Missouri River.

the land formations in the area were progressively lower in elevation in the southeast. In his opinion, this gradient was compatible with a theory of bar growth on the northeast side of the river as it migrated to the southwest.

Finally, the defendants relied on soil analysis which allegedly revealed findings consistent with the southward and eastward accretive movement of the river.[62] The government's expert, Dr. McQuivey, had testified that analysis of soil samples taken in the area produced data indicating that the soil becomes sandier as one moves westward in the Blackbird Bend area. Dr. Hallberg utilized this data to theorize that the sandier nature of the western edge of Blackbird Bend indicated that remnant channels had formed behind accretive point bars deposited as the river slowly moved to the southwest.[63]

Very few acts relating to the actual river movement in the period between 1912 and 1923 are proven on the record. First, it is clear that the thalweg had moved substantially in a relatively short period of time; perhaps as few as three

62 The parallelism of the bars between the remnant channel formations was also relied on to support an accretion theory. We have discussed the speculative significance of the parallelism of land features earlier. *See* discussion in section VI (C) *supra*.

63 Hallberg stated that the existence of marshy areas and well-defined channel remnants to the east, in contrast to drier areas and less well-defined remnant channels to the west, supported the theory that as the channel shifted away from its bank to keep up with the growing point bar it subsequently backfilled the area creating the remnants.

years,[64] but no more than 11 years. Second, as the trial court found, substantial high water periods occurred in 1905, 1906, 1912, 1913, 1915, 1916 and 1920. 433 F. Supp. at 83. Third, the angle of approach of the river had changed subjecting land in place to at least surface erosion. Furthermore, substantial erosion was undeniably occurring along the Nebraska shore.[65] Finally, it is beyond dispute that remnant channel-like formations may be identified by soil samples and aerial photographs. These established facts do not prove that either accretion or avulsion caused the river's movement; the issue remains whether they may form a sufficient factual predicate for defendants' witnesses to conclude that the marked change of the thalweg was a gradual one directly caused by erosion and imperceptible deposition to the Iowa land. We hold the evidence too conjectural and the ultimate conclusion reached too speculative to sustain the defendants' burden of proof under § 194.

The expert opinions and the lay testimony indicating that land in place could not be identified in the area are not sufficient to prove that accretion was responsible for the 1912-1923 movement. It is well established on the record that after 1890 as the river moved in a northerly direction alluvion soil subject to frequent inundation was de-

64 The testimony of Ross Willey indicated that the river still flowed in the easterly English Bayou area in 1916. Another lay witness, Judge George W. Prichard, who had traveled the area on horseback in 1919, gave testimony which tends to support the fact that most of the southerly movement of the river had been completed by 1919.

65 A large stand of timber shown in the northwest corner of the Barrett Survey area prior to 1923 was no longer visible in a 1927 aerial survey of the area, indicating the land on which it stood had been eroded.

posited throughout much of the area. Thereafter, when the river moved southwesterly away from the northerly high bank, either by accretion or as the result of avulsion, this sandy area would not reveal any conspicuous identifiable features. The fact that some erosive action occurred in the northwest corner of the Barrett Survey area does not support the inference that accretion was the primary cause for the movement. As we have noted earlier, erosion may readily occur along with avulsive movements of a river; the two phenomena may often take place together. Under the circumstances the absence of identifiable land in place has little probative value in determining whether erosion and accretion were in fact the responsible elements for the 1912 through 1923 movement of the river.[66]

Aside from the inconclusive evidence relating to identifiable land in place, little can be found in the record that supports the defendants' position. The fact that the river changed its angle of approach does not in itself support an inference that accretion was responsible for the changed movement of the thalweg. Although the change may have altered the erosion patterns in the Blackbird Bend area, it is still a tenuous conclusion at best to infer from this that the thalweg moved imperceptibly. While reasoned deductions may be made from probative facts, the ultimate conclusion may not rest on mere guesswork. Similarly, as in

66 The absence of trees in the area north of the Barrett Survey does not support an inference that the land had been completely eroded by the river's southwesterly movement. Depending upon the nature of the river's northerly movement, all trees growing in the area prior to 1912 may have been washed away. In addition ,the record indicates that many of the trees growing in the area after 1923 were cut for firewood in the 1930's.

the 1875-79 river movement, the sand bars and the gradient of the land could have just as easily occurred from deposition resulting from low river energy caused by avulsive movements of the river as by a gradual shift or movement of the thalweg.

The little solid scientific evidence in the record contradicts the defendants' theory of how the river moved. Soil samples taken in the area by government experts[67] corroborate Dr. McQuivey's testimony of the existence of four major channel remnants.[68] Aerial photographs made in 1925 also indicated the channel remnants in the area. Although the defendants presented an alternative theory of how the remnant channels might have formed, their existence is strongly probative of the government's

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67 The government had performed extensive soil analysis of the Blackbird Bend area. On government exhibit 151, which summarized the results of that analysis, the government's experts depicted those areas within the Blackbird Bend area where the soil samples indicated remnant channels, and those areas where the soil samples indicated bar-like formations.

68 These soil samples point out the existence of the remnant channels. McQuivey, the government's expert, testified that:

> Looking at Sample 61 and 56, 61 was silt on the top. There was some fine, very fine sand down to a depth of four feet, and then down to a depth of approximately twenty feet was soil clay. That is an indication of an old channel-type deposit, where the water has not been running in, and it's an area of back water or slack water to where the silts and the fine clays can be settled out.
>
> So basically, we can determine from the soil samples if there was an old channel there.

The defendants' witness did not dispute the validity of the soil samples but, instead, presented only alternate theories as to how possibly the non-alluvion soil was deposited.

theory that the river migrated from the northerly high bank to its 1923 position by a series of four point bar cut-offs.

We conclude on the basis of an overall review of the record that it is entirely speculative to determine when or how the thalweg moved to the position shown on the 1923 map.

IX. *Conclusion.*

The district court's ruling, adopting the defendants' theory of their case, depends on the assumption that the doctrine of avulsion is not applicable without evidence of identifiable land in place. On the record presented we deem this an erroneous legal assumption. When considered in the context of the broader parameters of avulsion we hold the defendants' case establishes only speculative inferences as to whether the thalweg moved by accretion or avulsion in the critical time periods involved. The essential inferences cannot be left to speculation or conjecture. Under the circumstances, we hold that the defendants have failed in sustaining their burden of proof under § 194.[69]

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69 How the river reached its outer eastern limit in 1875 or moved to its most northerly point in and around 1912 is outside the confines of this case. The Tribe contends erosion and accretion were responsible for these movements and there exists statements in the briefs in which it appears that the defendants have conceded this to be true. However, any such concession may have been predicated on an erroneous view of the law and should not be deemed binding under the circumstances. In using the word "accretion" in the context of the easterly movement from 1875 to 1879 and of the northeasterly movement from 1890 to 1912 we

(continued on following page)

We recognize that to require the defendants to prove the cause of the river's movement occurring some 100 years after the event is indeed an onerous burden. This may seem to be an injustice when one considers that the defendants or their predecessors have possessed and continuously farmed the land without protest for nearly 40 years. However, as the trial judge observed in a letter written to counsel after trial, divesting the Omaha Indian Tribe of their original reservation land promotes an equal injustice.

While burdening either side in this case with proving the movements of the river occurring many years ago may result in undesirable hardships, the clear policy of the federal government mandates that the interests of the Omaha Indian Tribe be given their historical and statutory protection. These important possessory land interests cannot be taken away on proof that is basically speculative and conjectural.

The judgment of the district court is ordered vacated; the cause is remanded with directions to enter judgment quieting title in the trust lands involved in this

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(Continued from previous page)

understand the defendants as merely saying that there has been deposition of land added to the Barrett Survey area. This land is all outside of the Barrett Survey and beyond the limits of the reservation established by treaty in 1854. The application of § 194 placing the burden of proof on the defendants in the present litigation is not controlling as it affects the area outside the original reservation. We do not in any way attempt to prejudge the several claims; nor do we foreclose the right of the plaintiffs to urge that § 194 is applicable under different proof. We simply note that the same proof showing presumptive title (Treaty of 1854) to the reservation cannot govern any future litigation concerning the lands outside that area.

action[70] in the United States as trustee, and the Omaha Indian Tribe; the prior orders relating to escrow funds and accounting procedures governing the 2,900 acres within the original boundary of the Barrett Survey as originally ceded to the Tribe in the Treaty of 1854 are ordered dissolved.[71]

A true copy.

Attest:

Clerk, U. S. Court of Appeals, Eighth Circuit.

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70 The government excepted from its complaint any claim to approximately 400 acres of land within the Barrett Survey which may have been allotted to individual Indians and subsequently patented to non-Indians. Any current claims to those lands by the Tribe might be affected by issues of adverse possession and laches. We therefore remand to the district court those claims related to the land excepted from the government's complaint for a determination on the above mentioned issues.

71 Plaintiffs question whether the trial court's judgment was final since it lacked certification under Fed. R. Civ. P. 54 (b). The claims here on appeal were severed from claims to land outside the Barrett Survey, asserted in C-75-4067, by order of Judge McManus. The severed claims in C75-4067 had been previously joined with quiet title actions pertaining only to the 2,900 acres of land within the Barrett Survey filed by the United States in C75-4024 and by the Tribe in 75-4026 which are on appeal here. Thus, the district court settled all of the questions of ownership involving the lands within the Omaha Indian Tribe's original 1854 reservation boundaries. Under the circumstances we view the severed claim in C-75-4067 as a wholly separate action which had been joined with the quiet title suits so that the judgment entered by the district court resolved the entire controversy then before it. Rule 54 (b) therefore, has no application since all, not "fewer than all of the claims," before the trial court were resolved by its judgment.

APPENDIX B

UNITED STATES DISTRICT COURT FOR THE
NORTHERN DISTRICT OF IOWA
WESTERN DIVISION

Filed:

Sioux City Office, Western Division, Northern
District of Iowa, May 4, 1977, 2:50 P.M.
K. W. Fuelling, Clerk; By: D. Henry, Deputy

No. C 75-4024

UNITED STATES OF AMERICA

Plaintiff,

vs.

ROY TIBBALS WILSON, et al.,

Defendants.

No. C 75-4026

OMAHA INDIAN TRIBE, organized Indian Tribe
pursuant to Act of June 18, 1934
(48 Stat. 984) as amended,

Plaintiff,

vs.

HAROLD JACKSON and OTIS PETERSON and the
DISTRICT COURT OF IOWA IN AND FOR
MONONA COUNTY,

Defendants.

No. C 75-4067

OMAHA INDIAN TRIBE, etc.,

Plaintiffs,

vs.

AGRICULTURAL INDUSTRIAL INVESTMENT
COMPANY, et al.,

Defendants,

FINDINGS OF FACT AND CONCLUSIONS OF LAW

The above-entitled actions, consolidated for purposes of trial, as to title to lands within the Barrett Survey Area of the area known as Blackbird Bend, came on for trial in the United States District Court at Sioux City, Iowa, on the 1st day of November, 1976. From the evidence submitted by the respective parties, and upon the entire record, the Court now makes the following:

FINDINGS OF FACT

I.

Nature of the Action and the Parties

1. These consolidated actions are lawsuits commenced by the United States of America and the Omaha Indian Tribe seeking injunctive relief and a judgment quieting title to land situated in the State of Iowa, Monona County, east of and adjacent to the Missouri River. The defendants are various entities, and individuals, who also claim title to the land in dispute and seek to quiet title in their names. The basic issue, as tried to this Court, involves how the river moved over the span of a century from the mid-1800s to about the mid-1900s, and whether the land herein involved was added to Iowa riparian land by accretion or, whether the river moved by avulsion leaving the original identifiable land in place.

2. United States of America, plaintiff in Civil No. C 75-4024, derives its interest in this litigation as a Trustee for the Omaha Indian Tribe and their reservation lands reserved to the Tribe pursuant to the Treaty of 1854.

3. The Omaha Indian Tribe, plaintiff in Civil Nos. C75-4026 and C75-4067, is a duly organized body corporate, established pursuant to its Constitution and By-laws having been approved by the Secretary of the Interior as provided by law. Pursuant to its Treaty dated the 16th day of March, 1854 (10 Stat. 1043) with the United States of America, there was established the Omaha Indian Reservation in the then territory of Nebraska.

4. In 1867 the said reservation boundary was surveyed for the General Land Office of the United States Government by T. H. Barrett, Surveyor. Barrett meandered the Nebraska, or right bank of the Missouri River where it adjoins the Omaha Indian Reservation in the course of conducting his survey. The Reservation boundary, as originally established, was the thalweg of the Missouri River. Thus the Barrett Survey lines were not actually the boundary of the Omaha Reservation where it adjoins the River. *See Hardin v. Jordan,* 140 U.S. 371, 11 S.Ct. 808 (1891). The said 1867 General Land Office Survey shows the Blackbird Bend of the Missouri River flowing east, south and west on the north, east and south sides of a meander lobe or peninsula sticking out like a thumb pointing east from Nebraska into Iowa. The area east of the Iowa-Nebraska 1943 Compact Lines bounded by the said Barrett meander line will be referred to herein as the Barrett Survey. The area including the Barrett Survey Peninsula but extending to the Iowa high bank, north, east and south of the Barrett Survey, will sometimes be referred to as the Blackbird Bend area. These findings and conclusions pertain only to the Barrett Survey Area.

5. Of the numerous defendants in all three lawsuits, the only defendants involved in this trial are those claiming an interest in the approximately 2900 acres within the 1867 Barrett Survey. These defendants are Roy Tibbals Wilson, landowner, RGP Inc., landowner, Otis Peterson, tenant of RGP Inc., Harold Sorenson, landowner, State of Iowa, landowner, and Travelers Insurance Company, mortgagee of RGP Inc. The 1867 Barrett Survey and the location of the defendants' land within that boundary, are set forth in Exhibit T78.

6. The Tribe's pleadings acknowledge that these landowner defendants, or their predecessors in title, have had possession of the disputed real estate for at least 40 years.[1] During this period of time, a substantial portion of the land was cleared of trees, leveled, fenced, drained, roads built, and cultivated. It is now a valuable and productive tract of farm ground, as evidenced by the purchase of 2180 acres by defendant Wilson in 1972 by Warranty Deed for a consideration valued at $1,685,000, approximately 1780 acres of which is within the Barrett Survey and the subject of this trial.

7. On April 2, 1975 the Omaha Indian Tribe seized possession of the land within the Barrett Survey before institution of this litigation, and up until June 5, 1975 maintained said possession without the approval or consent of any of the defendants herein. On June 5, 1975, Judge McManus granted a preliminary injunction to the Tribe and Government permitting the plaintiff Tribe to

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1 See paragraphs 30 and 31 of Tribe's Complaint in Civ. C 75-4067.

continue its occupancy of the land within the Barrett Survey during the pendency of this action and subject to certain accounting requirements pertaining to the crops. Numerous issues and problems relative to this temporary occupancy, the crops, and access rights developed but are not dealt with directly herein and many are hereby rendered moot.

II.

Subject Matter of This Trial

8. By the Order of Judge McManus dated April 5, 1976, a portion of the issues and land involved in all three lawsuits was consolidated for this trial. Approximately 8000 acres of land claimed by the Omaha Indian Tribe in C75-4067 and all issues of damages were severed. The severance of the Barrett Survey Area from the other claims of the Omaha Indian Tribe was necessary because the Barrett Survey line is the only clearly ascertainable line of demarkation, and was the boundary of the area of which the Tribe received possession by virtue of a preliminary injunction entered June 5, 1975. Thus as to the Barrett Survey Area the action was construed as an equitable quiet title action, and the demands of various defendants for a jury trial were denied as to that area. As to lands claimed by the Tribe outside the Barrett Survey Area, the action was treated as a legal action for ejectment, in which defendant's demands for a jury trial may be sustainable. This left the 2900 acres within the Barrett Survey as the subject matter of this trial since the dispute over that land is common to all three lawsuits.

9. By the Treaty of March 16, 1854, the Omaha Tribe of Indians ceded to the United States all their lands west of the Missouri River, except for certain lands reserved to the Tribe. Pursuant to this Treaty, the Tribe selected a tract of land known as Blackbird Hills to be the Omaha Indian Reservation, which includes the present day Omaha and Winnebago Reservations. The Reservation was thereby established in May of 1855. The thalweg of the Missouri River was constituted the common boundary between the Omaha Indian Reservations and the State of Iowa.

III.

Claims of the Parties and the Issues

10. The Government in C75-4024 alleges that it holds title in trust for the Omaha Indian Tribe to all those lands now lying within the Barrett Survey, approximately 2900 acres, and extending to the center of the main channel of the Missouri River as it existed when the Reservation was created. From this 2900 acres, however, the Government's Complaint excepts any claim for certain lands allotted to individual members of the Tribe and sold to non-members amounting to approximately 400 acres.[2] The Government seeks a preliminary injunction maintaining the Omaha Tribe and its members in possession of these lands until the case is decided; a judgment quieting title in the United States as Trustee for the Tribe; and, a permanent injunction against the

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2 See Government's Answers to Interrogatories Nos. 1 and 2, executed on March 8, 1976. It should be noted, however, that the Tribe's Complaints do not so except these 400 acres from their claims.

prosecution of state actions by the defendants relating to these lands.

11. The Government's theory is that the land within the Barrett Survey in 1867 was cut off from the rest of the Reservation through avulsions caused by floods on the Missouri River; the avulsive changes which cut through the ox-bow bend began shortly after the Barrett Survey in 1867 and occurred at numerous times thereafter up until the 1940s when the river was stabilized; and, that each such major move to the west was a sudden shift, which constituted an avulsive change as distinguished from the slow eating away of the banks through erosion.[3]

12. The Tribe in C75-4026 alleges that it is in peaceful possession of the land within the Barrett Survey; that the United States holds the subject lands in trust for them under the Treaty of 1854; and seeks a stay of certain state district court orders pertaining to the occupancy of the land and a preliminary and permanent injunction maintaining the Tribe in possession. In C75-4067, the Tribe filed suit against numerous defendants claiming title to the entire Blackbird Bend area, some 6000 acres of land, and also claiming two bends in the river to the north containing approximately 5000 additional acres. The Tribe alleges that it holds title to the subject land pursuant to the Treaty of 1854; that the adverse claims of the defendants, who have illegally and wilfully trespassed upon the land for approximately 40 years thereby preventing the Tribe's occupancy, are null

3 See Government's Answer to Interrogatories, Nos. 4, 5 and 11, executed on March 8, 1976.

and void; and seek essentially a judgment quieting title to all the land in the Tribe, the restoration of possession to it, and damages for $50,000,000 for illegal trespasses.

13. The Tribe's theory is that between the time the Treaty was signed in 1854 and 1867, when Barrett made his survey, the river moved eastward by erosion and added to the size of the meander lobe by accretion. After 1867, the Tribe contends this migration eastward continued until 1875 when the easterly high bank, which is apparent on the land today, was created representing the farthest eastward progression of the river in the Blackbird Bend area. Then, the Tribe further claims that sometime between 1875 and 1879, the river suddenly and perceptibly by avulsion, departed the main channel of 1875 to the 1879 channel to the west permanently severing a substantial acreage of the Reservation from the right or west bank of the Missouri River including a portion of the land within the Barrett Survey, and thereafter the Missouri River flowed within the boundaries of the Reservation. After the claimed avulsion between 1875 and 1879 the Tribe contends the river moved north from the 1867 Barrett Survey line eroding as it proceeded and increasing the size of the Reservation by accretion just as the river did in its easterly movement. The Tribe next asserts between 1908 and 1912, the river reached the northerly high bank, which is also visible on the land today, and sometime thereafter departed by avulsive movement to the south like the claimed avulsion from the easterly high bank. The Tribe, therefore, concludes that these avulsions left Omaha Indian Reservation land in place.[4]

4 See Tribe's Proposed Findings of Fact and Conclusions of Law executed October 24, 1976.

14. The defendants in their Answers deny that the lands involved in these suits are a part of the Omaha Indian Reservation but claim title and the right to possession is theirs and seek a judgment quieting title in their names, along with other injunctive relief, by way of counterclaim. Affirmative defenses are also raised in their Answers based upon the statute of limitations, adverse possession, laches, estoppel, abandonment and acquiescence, and general equitable considerations. The Tribe, however, sought and obtained a summary judgment by Judge McManus on these affirmative defenses before trial and while the defendants still assert their applicability they are, therefore, not in issue at this stage of the proceedings.

15. Defendants' theory is that the land within the Barrett Survey was washed down the river and replaced by new land which accreted to the east or Iowa bank. They contend that the eastern approximately one-half of the Barrett Survey peninsula was a low sandy point in 1867 subject to frequent inundation and easily erodable.[5] After 1852, the meander loop of the River moved eastward until, sometime prior to 1875, it reached its limiting width, and its easternmost position in the locality here in issue. Thereafter, the meander loop commenced a gradual migration to the west and south until by 1879, it had eroded away almost all of the "low sandy point," and had commenced a process of accretion to the eastern and northern Iowa bank in the areas it had occupied sometime prior to 1875. Accretions were gradually added to the left or Iowa bank of the river and by 1890 a

5 See Barrett Survey Field Notes, Exhibits T26 (d) and (3).

stable land mass had been created and added to the Iowa riparian land. In 1890, the river in the Blackbird Bend area was relatively straight, but the river again started to work itself into a meander bend to the north, which bend then began to migrate downstream in the classic manner through the Blackbird Bend area and the land then situated within the Barrett Survey, until by 1927 the bend had migrated entirely through the area formerly occupied by the 1867 peninsula washing away all the land in its way on the Nebraska or right bank and depositing new land on the Iowa or left bank. Between 1927 to 1943 the river moved westerly to the Iowa-Nebraska 1943 compact line completing the accretions to the Iowa bank which form the subject matter of this lawsuit.

16. The question before this Court for resolution is, therefore, how the river moved between the middle 1800s to the middle 1900s, and specifically whether the land now within the Barrett Survey line was formed as the result of accretions to Iowa riparian land or, alternative, whether it is Omaha Indian Reservation land presently identifiable as being left in place by an avulsion or avulsions.

IV.

Discussion of Evidence and Resulting Findings of Fact on the Merits*

To aid in the task of making Findings of Fact, the Court makes the following discussion of the evidence:

*All references to the transcript shall be in parenthesis with the transcript page first followed by the line where the testimony may be found.

A. INTRODUCTION

It is appropriate at this point to identify the nature of the river with which this case deals. During the period from 1854 until at least the early 1940s the Missouri River can best be described as in a wild and uncontrolled state. As described by Major C. R. Suter in APPENDIX S, of the annual report of the chief of engineers for 1881 (Exhibit T65; W-XX) on page 1650:

> " . . . Its most salient and striking features are the remarkable impetuosity of its current, and its slope, which is considerable for so large a stream. The rapidity of the current and the general instability of the banks and bed give rise to the excessive turbidity of its waters, which have earned for it the title of the 'Big Muddy.' "

And on page 1651:

> " . . . The April rise is generally the most destructive, for it shows, for a time at least, a tendency to follow the channels developed during the low water season proceding, and, as a consequence, the banks are attacked with extreme violence. When the June rise comes the bed is in a measure shaped for its reception by the preceding flood, and the water passes off with somewhat less destructive results. Both, however, have sufficient power to produce tremendous effects and bring about the most astonishing changes."

And finally on page 1652:

> " . . . Bank erosion to the extent of 2,000 feet per annum, over long distances, has been noted, and to a greater or less extent it is constantly going on, even during low stages. The enormous amount of material thus precipitated into the river, together with that scoured from the bed, causes the formation of innumerable bars, which, even at high water,

> obstruct navigation. These bars are constantly in motion, their position and shape changing from day to day. The channels through them are also changing both in depth and location, rendering navigation correspondingly uncertain. Owing to the incessant bank erosion the river is steadily increasing the width between high banks, as the bars which are formed opposite caving shores take time to build up to the general level and are meanwhile liable to be themselves attacked and swept away. The erosion *which usually occurs on the upper sides of points* causes these points to move bodily downstream. Where the erosion is more rapid than the bar growth below, the point disappears and the river's course is detrimentally straightened . . . " (Emphasis supplied.)

The Missouri River was in this period an alluvial river. This means that flow of the river itself makes the geometry of the channel (2902:4-16). During this period it carried large sediment loads because of the runoff from relatively barren lands adjacent to its boundaries (2903:1-11). These large sediment loads created tremendous erosive power (1498:20). Therefore, the flow itself makes its boundaries and the character of the flow is in turn influenced by the nature of its boundaries (2929-2931). It was a river that can best be described as in a state of constant change and movement except during periods of relatively low flow.

Because of the high quantity of sediment transported by the Missouri River during the period in question, the channel tended to meander or become sinuous, rather than flowing in a straight course (2915:1-12). It is generally accepted as a fact by all of the witnesses that the sinuousity or meanders of the river likewise tended to migrate downstream during the course of various periods

in time (900:5; 2076:17; 2574:18-2575:11). Therefore the channel of the river was constantly moving and changing its primary or principal course (1538:14). This resulted in erosion of certain land by the movement of the main channel of the river and deposition of sediment being carried by the waters which usually took place opposite where the erosion occurred (311:23; 839:20; 900:5; 1479:11; 2027:9; 2974:11-2948:4). This oftentimes left certain landforms remaining such as sloughs, bayous, lakes, dunes, sandbars and other topographical irregularities which can be geologically identified. Exhibits G154 and Exhibit W-8.) Of additional significance is the nature of the soils which can be presently identified today, these soils consisting primarily of medium to fine sands, silts and clay which are not cohesive and easily erodible (2586:25-2587:16). These are the soils which would be typically found in an alluvial floodplain as being deposited during the course of river migrations.

B. DEFINITION OF TERMS:

This Court has prepared and filed a memorandum opinion which analyzes and discusses the difficult choice of law questions presented in this case, as well as the definition of the terms accretion and avulsion. Reference to that memorandum opinion should be made for complete definitions which this Court has applied in arriving at these findings. However, it may generally be said that the various jurisdictions apply definitions of the processes of accretion and avulsion which are substantially similar. For purposes of clarity in these findings, this Court will apply the following general definitions:

(1) "Accretion" results from a gradual and imperceptible addition to the shoreline by action of the water to which the land is contiguous. The action of the water deposits silt and sediment which becomes accretion land. It may occur slowly or rapidly from the action of the river, but it is additional land which cannot be identified as having existed in its present location prior to a change in the location and course of the river which it abuts. When a river moves its course and location through the process of accretion, it has eroded away one of its banks and made depositions of silt and sediment against the opposite bank. The process of erosion destroys land on the bank opposite the accretion deposits by washing it away. The accretion deposits are at least partly composed of land which has been eroded away upstream, and carried downstream by the river in the form of silt until it is deposited against one of the riverbanks.

(2) "Avulsion" is the sudden shifting of the channel of the river and a body of land must be cut off so that after the shift it remains identifiable as land which existed before the change of the channel and which never became a part of the river bed. It is a sudden and rapid change in the channel of a stream where the old bed is abandoned and a new bed is formed in such a manner as to not destroy the integrity and identity of the land between the old and the new channels. Thus a primary distinction between accretion and avulsion is that avulsion does not erode away and replace by deposits of silt the land between the old and new channels.

(3) "The high bank" is a presently existing identifiable land feature of a higher elevation than the re-

mainder of the floodplain in Blackbird Bend and represents the most northerly, easterly and southerly erosion by the Missouri River during the period in question in this case.

(4) "The right bank" is the Nebraska or most westerly bank of the river at any given point in time during the period in question.

(5) "The left bank" is the Iowa or most easterly bank of the river at any given point in time during the period in question.

(6) "The thalweg" is the center of the navigable channel of the river at any given time. It is not necessarily the "thread" of the river which is considered to be the line midway between the banks at the ordinary state of the water without regard to the location of the thalweg.

The dispute in this case is almost entirely factual and, to a large extent involves the interpretation of documentary evidence, i.e. maps and supporting documents between the period of 1852 until 1940, inasmuch as most of the witnesses living during that time have died. Only a few witnesses were still alive who observed the river in the early 1900s. Therefore, it becomes necessary to detail the evidence available during certain periods of time in order to resolve the conflicts as between the claims of the plaintiffs and those of the defendants.

C. THE MISSOURI RIVER BETWEEN 1852 AND 1879.

1. *1852-1867.* This period of time in history is of limited significance to the Court. The information that can be gleaned from the surveys and maps made during that period is somewhat limited. Since the instant case involves only title to land within the 1867 Barrett Survey, the actions and locations of the Missouri River within the period 1852 and 1867 have not created or caused a boundary dispute. Thus a discussion of the information between 1852 and 1867 is useful for purposes of background only. The first known survey was a left bank survey in 1852 by Deputy Surveyor Anderson of the General Land Office (Exhibit T22a-g). In 1855, following the treaty with the Omaha Tribe, Deputy Surveyor Barnum, General Land Officer surveyed the boundary of the Omaha Indian Reservation (Exhibit T8 and T8a). Neither Anderson nor Barnum surveyed the river or the opposite bank of the river in 1852 or 1855. In 1855 and 1856 a reconnaisance map of the river was prepared by Lieutenant G. K. Warren (Exhibit T23). In 1857 and 1858 a "tie" survey as between Iowa and Nebraska was performed by General Land Office Deputy Surveyors Hopkins and Haddock (Exhibits T25 and T25a-e, and Exhibit W-E3). In 1867 General Land Office Deputy Surveyor Barrett surveyed the right bank of the river (Exhibit T26, T26a, W-G3, H3 and I3). Once again this survey provides no information as to the left bank at that time or the width of the channel of the river at the time that survey was made. The Barrett survey was conducted during the months of April and

May. In the area in question the Barrett line is only a meander line following the outline of the bank of the river as it existed during April and May of 1867. As noted above, it did not purport to establish the boundary of the Reservation in the area in question, since the boundary was the thalweg of the river. *See Harden v. Jordan,* 140 U.S. 371, 11 S.Ct. 808 (1891). Nevertheless, the location of the Barrett meander line can be established, and thus the line provides the only clearly marked line which can be used by a fact-finder as a basis to adjudicate boundary disputes. In fact, the Barrett line was used by the Court to limit and define the area of which the Tribe was granted possession in the preliminary injunction of June 5, 1975. For these reasons, and the procedural dilemma created by the fact of the Tribe's possession of the Barrett Survey Area discussed above, the trial of this case was limited to the Barrett Survey Area, and these findings and conclusions are also so limited. During that same year and after the Barrett survey, a map of the Missouri River was made by Colonel J. N. Macomb (Exhibit T27). The Macomb map was compiled from sketches by Captain C. W. Howell of the Corps of Engineers and by Missouri River pilots and others. Exhibit T95 is a composite map showing the Barrett survey of 1867 and the Macomb map readjusted by the witness Clark to fit the survey by Barrett. Plaintiffs concede by their testimony that the measurements are not accurate as far as distances on the Macomb map are concerned (210:23) and therefore the reliability of the composite Exhibit 95 is subject to some question. The defendants take these same maps and by the use of mylar overlays superimpose them upon

a base map of the Blackbird Bend area (Exhibits W-P7, R7, S7, T7, U7, and V7). The obvious differences between the adjustments made by the plaintiffs on Exhibit 95 and the defendants' mylars makes it impossible for the Court to reconcile the correctness of the interpretation of either side. Since this case is only concerned with the Barrett Survey Area, and since there is no dispute that the river was east of the Barrett line, disputes over the precise location of the Missouri River channel and thalweg as of 1867 have little significance in this case. The admitted distance inaccuracies on the Macomb map by the plaintiffs likewise makes their composite Exhibit 95 somewhat suspect in the mind of the Court. Therefore, the only real conclusion that the Court can make about the movement of the river between 1852 and 1867 is that there has been an eastward migration of the right bank meander lobe during this period of time with the river eroding against the left bank and accretion taking place on the easterly tip of the meander lobe as surveyed by Barrett. This is evident from the "low sandy point" as shown on the Barrett survey which encompasses about the eastern mile or more of the meander lobe. Barrett's field notes (Exhibit T26E) indicates this is an area which is very low and sandy and subject to frequent inundation.[6] It is significant to note

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6 Barrett Field Notes, General Description, Exhibit T26E, P. 520: "Fractional Township 29 N. R. 11 East the 6th Principal Meridian, is a low, sandy point, subject to frequent inundations from the Missouri River. Except a few small cotton wood trees and some willows, there is almost no vegetation upon it. The Missouri River is constantly changing its banks, so that no permanent corners can be established near the water; indeed, except where there are bearing trees, none

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at this juncture that the expert witnesses produced in the trial of this case almost unanimously agreed that accretion land will form originally as point or middle bars; these bars are low and sandy, unstable, vegetation free and when subject to inundation are easily erodible. (824:13; 844:7; 2586:25-2686:16; 2017:17).

That the easterly end of the Barrett meander lobe as surveyed was accretion is not seriously disputed by anyone. The maps and the evidence likewise reflect that during the period from 1852 until 1867 there was some southerly migration by the river which, under normal circumstances, would result in formation of some accretion on the opposite or northerly side of the river which would be accretion to the left bank (311:23; 839:20; 900:5; 1479:11; 974:14).

2. *1867-1875.* In the nine-year period between 1867 and 1875 there are no maps or surveys introduced in evidence which show the location or movement of the river during that period. However, from the Onawa Iowa Public Library there was introduced in evidence an historical atlas printed by A. T. Andreas in 1875 which purports to show the left bank of the river at or about that time (Exhibits T28 and W-L13). The reliability of the date and the accuracy of the atlas are questionable in view of the lack of information as to the source from which the atlas was made and the date of said source. It is

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of the corners in this Township will probably remain longer than the first high freshet in the Missouri. Small quantities of coal were deposited in the several mounds as per instructions, but the sandy soil will not prevent it from being washed away."

apparent that during the period between 1852 and 1875 the river did move easterly, eroding the Iowa or left bank as it moved. Because this case is limited to the Barrett Survey Area, this Court will make no effort to pinpoint the location of the river during this period, and makes only a general finding that the river had moved to some point east of the Barrett line during the years 1852 to 1875 by the process of erosion and accretion.

3. *1875-1879.* This then sets the stage for the first area of principal dispute as between the parties. In 1879 the Missouri River Commission (forerunner to the U. S. Corps of Engineers) surveyed the Missouri River in the Blackbird Bend area (Exhibits T29, W-M3 and W-N3). Careful examination of the original survey maps shows the river width within the Barrett Survey at that time to be about 10,000 feet in width when measured from east-west. The 1879 map shows a crescent shaped bar immediately west of the easterly high bank which has been labeled on some of the exhibits as bar "A" (Exhibit W-N3). Westerly thereof is another crescent shaped bar which has been labeled as bar "B". The map makers have indicated by a common map making symbol that there is some willow vegetation on bar "A" but bar "B" appears on the map as simply a vegetation-free sandbar. Immediately west of bar "B" is a small "tear-shaped" bar which has been labeled as bar "C"—the map shows this bar has willows growing thereon. North and west of bars "B" and "C" is a series of sandbars which have been variously described by witnesses as having the appearance of a "fishbone"—these bars, like bar "B" are likewise vegetation-free.

It is the claim of the plaintiffs that between 1875 and 1879 the river was flowing against the easterly high bank and that between 1875 and 1879 an avulsion or avulsions took place and that the river abandoned its 1875 bed and by one, or two or more avulsions (291:17-Clark); or by one avulsion, probably in 1879 before June, 1879 (1161:9-14-Robinson); or by several major jumps (1502:8-McQuivey), and established its bed in the 1879 position.

The defendants on the other hand claim that the river moved after 1867 to its 1879 position by gradual erosion south and westward against the meander lobe as surveyed by Barrett in 1867 with deposition occurring on the opposite side of the erosion resulting in the formation of bar "A" as an accretion bar joined to the Iowa riparian land in Section 29, Township 84 North, Range 46 West and becoming later attached to the Iowa riparian land in Sections 28 and 34, in Township 84 North, Range 46 West (2603:13-2604:23; 2939:4-2944:5). The defendants point to certain facts to support their claims which the Court believes are relevant and logical:

(a) The vegetation on bar "A" as shown by the exhibits is willows. Willows are the first vegetation to appear as sandbars are formed because they will grow on sandbars that are subject to frequent inundation whereas cottonwoods need higher and drier land before growth is established. Willows will start to grow within one to two years after the bar surfaces (1390:20). This indicates therefore that bar "A" was of fairly recent origin and was not land in place left as the result of a sudden avul-

sive movement by the river. No witness for the plaintiff claims that any part of bar "A" is presently identifiable as land which was left in place following an avulsion (1660:20-1661:20; 1020:12-1022:10).

(b) Plaintiffs theorize that in 1875 the river was flowing against its easternmost bank, and was at that time a channel more than 800 feet wide. *Omaha Indian Tribe's Proposed Findings of Fact and Conclusions of Law, 38, Finding* No. 19. They further theorize that, in 1875, the river abandoned this 800 foot wide channel in an avulsion. *Id. at 39, Finding No. 22, et seq.* Yet Tribe's Exhibit 99 locates bar "A" at a distance of much less than 800 feet from the easterly bank depicted there. This inconsistency supports this Court's finding that bar "A" is not "land-in-place" which was, prior to the 1879 river change, a part of the Blackbird peninsula on the Nebraska side of the river. Bar "A" as mapped in 1879 by the Missouri River Commission appears to be entirely composed of sand and willows. A remnant chute channel is shown on the exhibits as existing between bar "A" and the easterly high bank. The plaintiffs acknowledge that the width of that channel remnant is too narrow to be the width of the 1875 Missouri River channel. It is a common phenomenon, as described by the witnesses, that when a river moves away from its previous channel by the process of erosion of a point bar that it will close up the old previously existing channel at the upper end leaving a remnant chute (2179:8), (known locally as

the "Iowa Chute") such as that found adjacent to bar "A" on the east.[7]

(c) Bar "B" is not identifiable land in place because it is barren of vegetation and therefore is obviously a middle sand bar which has recently formed during the westerly movement of the river between 1867 and 1879.

(d) Like bar "A", bar "C" has willow vegetation growing on it. Willows are the first vegetation to grow as waters recede (1390:20). Thus the mere existence of willows on bar "C" does not, standing alone, support a finding that bar "C" was left in place through an avulsion. The only other evidence that bar "C" is land-in-place is the fact that the 1879 maps locate bar "C" in the northeast corner of Section 19, Range 11 east, Township 24 north. This location is within the Barrett Survey line and was on the Nebraska side of the river. From its review of the evidence, however, this Court finds that the land which had been located in the northeast corner of Section 19,

7 Judge George Prichard Testimony: "We called those the Iowa Slough. Always along the Iowa bank when these places formed, when the sandbars formed in the river, the water runs on both sides for a while. Then eventually up at the north end then the other side there would be a slough along the Iowa side. The main channel would usually work west. Then the upper end of the Iowa slough would close up. Low water or fill up, I don't know which. Then eventually the whole thing would close up. Although in this particular locality, English Bayou, which was below a mile or two, it stayed open after 1940, I know" (2430:11). "Q: Was this closing up of the Iowa chute at the upstream end a common occurrence from your observations as you hunted along the river? A: In my opinion that's the way they always formed. Q: From your observations? A: Yes." (2442:7).

Range 11 east, Township 84 north had been eroded away at some time prior to the 1879 Missouri River Commission map, and further finds that bar "C" is a middle bar which formed on that location as the river migrated west. Bar "C" had, by 1879, existed long enough to support willow growth. In this connection, it should be noted that, by 1890, the area in the northeast corner of Section 19, Range 11 east, Township 84 north, bears no vegetation which is described on maps as being different from vegetation on other areas in the surrounding land mass which had formed by 1890. (See Tribe's Exhibit 101.) If bar "C" were land-in-place which had existed prior to 1879, it would have supported the growth of cottonwoods or other vegetation more substantial than willows by 1890.

(e) Bar "D" cannot be identified as being land in place which existed at the time the meander lobe was surveyed by Barrett because those bars are likewise middle sandbars only and being barren of vegetation are therefore forming behind the southerly and westerly migration of the river as it moves to the southwest depositing accretion material on the opposite side of the channel during the course of its movement (2587: 17-2589:13; 2948:5-2949:12).

(f) The shape, location, position and condition of bars "A", "B", "C" and "D" are consistent with the gradual southwesterly movement of the river away from an easterly high bank; a movement of that sort would erode away the meander lobe as surveyed by Barrett in 1867; such a movement would likewise deposit accretion on the side of the river opposite the

erosion which is exactly what is seen in bars "A", "B", "C" and "D".[8]

(g) Of remarkable similarity, are the experiments of Captain Friedkin (Exhibit zz) which show the process by which accretion to the riparian land is formed by the meandering of alluvial rivers such as the Missouri.[9]

(h) Between 1867 and 1879 the meander lobe was low and at times entirely under the surface of the moving river. The Friedkin experiments and the hyrologic experience shows that during high water flows, the river will flow and erode against the upper side of the point bar as revealed by Major Suter (Exhibit XX, P. 1652). Therefore the main channel begins to move against the lobe eroding the same (2934:21-2937:7). As the lobe erodes, the channel migrates to the south and west. As the channel moves over the area where the lobe had existed, it removes remaining portions of the lobe by scouring itself a new channel. In other words, this shift in the course of the river is a consequence of progressive scour and deposition (the scour occurring against the meander lobe and the deposition occurring on the opposite side of the channel from

8 Testimony of Dr. George Hallberg: "My opinion on those bars is very similar to what I have described for the formation of bar A. As the main channel of the river has shifted from the high bank to the west and to the south, we have in essence what I have been describing, back filling behind it in this area of low energy environment. Just as we have built bar A down in this point off in this direction, we have continued to build these bars down" (2604:16-23).

9 See Exhibit zz, Plates 22, 53 and 61.

where the scour occurs). The logical result of this deposition is the formation of bar "A" as shown on Exhibit W-N3.[10]

FINDINGS BY THE COURT — 1852-1879

The plaintiffs base their case on the testimony of Mr. Clark, Dr. Robinson and Dr. McQuivey as to the movement of the river between 1875 and 1879. Their testimony in this regard is very vague and oftentimes uncertain. Mr. Clark simply recites that it is his opinion that between 1875 and 1879 the river by series of movements changed its channel from the 1875 position against the easterly high bank to its 1879 position as shown by the Missouri River Commission mapping (291:17). Although he doesn't know when (612:17-23). Dr. Robinson is inconsistent with Mr. Clark in this regard inasmuch as Dr. Robinson thinks that the sudden avulsive movement as he described it occurred in 1879, before June (1161:9-14). Dr. McQuivey contradicts this by concluding that there were "several major

10 Testimony of Dr. John F. Kennedy: "Q. The question essentially is what's your opinion as to how bar A, as is shown on Exhibit N-3, and during the recess we put up U because it has the thalweg soundings on it. How was that formed during the period between 1875 and 1879?" (2947:11-15). "THE WITNESS: All right. I have testified that it is my judgment that this whole convex bar had been obliterated during this period of high flows that occurred in four years between '75 and '79. Now, as the channel progressively moved to the west and with the thalweg shifting westward, this would become a river of diminished velocity, a slack water area or area of lowest velocity. Consequently, sediment that gets into this area would tend to be deposited because of the diminished sediment transport capacity of the water flowing in this area. Additionally, when this was all inundated there would be moving through it here an ensemble of very large sand waves or sand dunes." (2947:19-2948:7).

jumps" (1502:8). A careful examination of the testimony and the mapping done in 1879 leaves little doubt in the mind of the Court but what Dr. Robinson is in error in his conclusions. If the avulsion had occurred in 1879 as Dr. Robinson opines, then it would be impossible for willows to be growing on bar "A", because the willows are growing at a place where the channel would have to have been flowing (1152:20). Obviously those willows growing along the easterly end of bar "A" would have been in the 1879 channel prior to the avulsion. Therefore for the willows to be growing at that place as mapped by the 1879 Missouri River Commission would be an impossibility as even willows don't grow that fast. The testimony of Mr. Clark is likewise inconclusive. Elmer Clark is a surveyor with considerable experience, but he is neither a geologist nor a hydrologist (747:22).

On the other hand the testimony of Doctors Hallberg and Kennedy is extremely persuasive (2939:4-2944:18; 2567:18-2568:10; 2571:12-2576:13). Both are highly qualified, both educationally and by experience in their field and with the Missouri River. Their testimony is more clear and convincing to the Court and the most probable in the light of reason, common experience and the other evidence in the case. Their testimony is adequately supported by the testimony of Raymond Huber whose practical knowledge and expertise was gained by 37 years during which he traveled, studied and engineered the control of the wild and untamed Missouri River.

It is therefore the Finding By The Court that between 1852 and 1879 the Missouri River moved to its easternmost position at a point east of and outside of the Barrett

Survey Area. Having reached that most easterly location, the river, by a gradual progression during periods of high flow commenced a southerly and westerly migration away from the easterly high bank (2606:6-25). This caused the old channel against the easterly high bank to close at its upstream end by the process of deposition and siltation leaving a remnant of the old channel against the easterly high bank such as has been described by Judge Prichard (see footnote 7, supra). As the river moved in a gradual progression to the south and west it was eroding against the meander lobe as surveyed by Barrett in 1867 destroying and entirely washing the land surveyed by Barrett down the river (2955:17-2956:19). Deposition of silt, sands, and gravels (described by plaintiffs' counsel as "alluvion") was occurring during this process. This resulted in additions of new land to the left bank which new land was beyond the power of identification. It was in fact accretion to the Iowa riparian landowners in Sections 29, 28, 34, 33 and 32 in Township 84 North, Range 46 West (2951:3-2952:15).

As a consequence by 1879 the action of the Missouri River had completely obliterated and washed away the meander lobe as surveyed by Barrett to almost the westerly edge of Iowa Sections 29 and 32 in Township 84 North, Range 46 West, as well as the lands surveyed by Barrett which fall within Iowa Sections 28 and 33 of Township 84 North, Range 46 West. As a consequence the Court finds that the claims by the plaintiffs that any lands within Iowa Sections 28, 29, 32 and 33, Township 84 North, Range 46 West as being identifiable land in place as the result of an avulsion between 1875 and 1879 are not substantiated by the greater weight of the evidence. The Court finds by a preponderance of the evidence, that in 1879 any lands lying

within Iowa Sections 28, 29, 32 and 33, Township 84 North, Range 46 West as surveyed by Barrett were new lands added by the process of erosion and accretion to the shoreline and were not identifiable as land which remained in place through the river movements and were accretion land to the Iowa riparian owners.

D. THE MISSOURI RIVER BETWEEN 1879 AND 1890

1. *1881.* It is conceded by all of the witnesses that in 1881 a flood occurred on the Missouri River which recorded the highest flood waters of any time since reliable records have been kept (Exhibit T97 and T104; Exhibit G124). In fact, Exhibit T97 reveals that the 1881 flood waters were ten feet higher than the June 16-20, 1879 water level (606:1-7). However, no maps were made of the Missouri River in the Blackbird Bend area between 1879 and 1890. Therefore, the effect upon the landscape in the Blackbird Bend area by virtue of the tremendous force of the 1881 flood is factually unknown. There is testimony, however, that during periods of high water flows, the river channel tends to straighten which will modify the channel configuration (1507:22; 2951:13-17). Following a flood of this magnitude the channel then begins to seek a new equilibrium and to consolidate its course (2959:8-15). Changes in the channel upstream from the Blackbird Bend area likewise are of considerable significance during this period of time (1508:10).

In 1890 the Missouri River Commission again mapped the channel as shown by Exhibits W-P3, T32 and T101. The mylar overlay, Exhibit W-Y7 when overlaid on W-X7 shows that the course of the river after 1879 and by 1890 has in fact straightened somewhat and has moved by migration

somewhat to the north and to the east of its 1879 position. All parties agree that this northeasterly movement would be by erosion against the left bank with some accretion deposition occurring on the right bank.

There is however a very significant feature on the 1890 Missouri River Commission map which must not, at this point, be overlooked. The map clearly shows that lands located with Sections 28, 29, 32 and 33 in Township 84 North, Range 46 West, which had previously been within lands surveyed by Barrett in 1867 are now solidified and vegetated accretion land to the left bank Iowa riparian owners (Exhibit W-P3). This simply shows the normal and logical progression of the accretion which was shown to be forming in 1879 when the river was then mapped by the Missouri River Commission.

A thorough examination of Exhibit W-P3 which is a scale copy of the 1890 Missouri River Commission map with the Barrett survey line superimposed thereon shows a material change in the upstream channel from Blackbird Bend (McQuivey 1508:10 & 1538:20). It shows the formation of a bend upstream which is similar in shape to the Barrett survey meander but not nearly as large in size. A long westerly oxbow on the approach to Blackbird Bend indicates erosion against the right bank and deposition in the form of a point bar on the left bank. Two other land features are shown which have been identified as being left as the result of the avulsive action of the river (2589:2-13). These are Blue Lake shown to the east of the Blackbird Bend and which was formed before 1852 (2827:17) and an old riverbed "cutoff 1875" which lies southerly of Blackbird Bend and which has been referred to in the evidence

as Lake Quinnebaugh. The significance of these two features bears discussion (2593:18-2594:6). Recall the plaintiffs' claim that between 1875 and 1879 an avulsion occurred when the river allegedly left the easterly high bank and moved to its 1879 position as shown by the Missouri River Commission map. However, an examination of the land features in Blackbird Bend reveals that the land features are strikingly dissimilar to Blue Lake and Lake Quinnebaugh (2594:7-10; 2595:8-19). Those features indicate that when an avulsion occurred in the areas of Blue Lake and Lake Quinnebaugh it left the then river channel in substantially its then width, depth, shape and position. This formed an oxbow lake of significant size and depth. Had such an occurrence taken place between 1875 and 1879, as alleged by the plaintiffs, it is the Court's opinion that a similar land feature should have likewise remained and would have been so mapped in 1879. The absence of such a land feature is substantial evidence in the mind of the court that an avulsion did not take place between 1875 and 1879 in Blackbird Bend as alleged by the plaintiffs. Likewise the condition of the land in 1890 in Sections 28, 29, 32, and 33, Township 84 North, Range 46 West shows it to be covered with vegetation and trees and has by that time become all accretion to the Iowa riparian owners in Iowa Sections 28, 29, 32, 33, and 34, Township 84 North, Range 46 West.

E. MISSOURI RIVER BETWEEN 1890 AND 1912

The evidence is somewhat uncertain as to the movement of the river between 1890 and 1912. There is an 1894 Monona County Survey of the left bank which is of some assistance as to the left bank of the river (Exhibit U-3).

This does show a continued northeasterly migration of the left bank of the river which is consistent with the position of the river in 1890. The 1894 county survey shows the left bank in approximately the same location as shown by the Missouri River Commission in 1890, but an accretion bar has formed which is strikingly similar to bar "A", as shown on the 1879 map. There is a 1900 plat of accretions made by Monona County Surveyor R. S. Fessenden which is received in evidence (Exhibit Z-3). The 1900 Monona County surveyor shows accretions to government lots in Sections 28 and 33, Township 84 North, Range 46 West in Monona County, Iowa, and is recorded on January 23, 1901 in the office of the Monona County Recorder. Exhibit U-8 is an overlay of the 1900 Fessenden survey, Exhibit Z-3, showing the continued westerly movement of the accretions lands as shown by the 1890 survey.

An atlas map, published by the George A. Ogle Company in 1906, is received in evidence as Exhibit D-4, and the Tribe composite made from that map has been received in evidence as Exhibit T-102. This indicates some additional north and east migration of the left bank of the river but is of little assistance to the court as to the location of the right bank during this period. These are the only maps between 1890 and 1912. However, the general course of the river during this time indicates the development of a pattern which is somewhat similar to the easterly migration of the river during the period between 1852 and 1867. The river is meandering further north than it had in 1867, but not as far to the east (2639-2640). There is some erosion into the accretion which had previously formed adjacent to the Iowa left bank riparian owners (2642:22-2643:12).

F. THE MISSOURI RIVER BETWEEN 1912-1923.

In 1912 a left bank survey was accomplished by surveyors Fairchild and Oliver. This original survey has been received in evidence as Exhibit Q-8. Payment for this survey was authorized by the Monona County Board of Supervisors on March 5, 1912 as evidenced by Exhibit H-4. It was a survey of the Monona County west boundary, or as described by the minutes of the County Board of Supervisors, the "Missouri River Line". An examination of the exhibit leads to the obvious conclusion that it is the original survey map as made by surveyors Fairchild and Oliver upon which have been superimposed some Lewis and Clark camp sites by historian Mitchell Vincent (See, Exhibits T71 and T72).

The significance of the Fairchild survey (as it is referred to in the evidence) is two-fold. First, it shows the 1912 water line on the Iowa side of the river as surveyed by Mr. Fairchild. Secondly, in partial Section 24 and 25 of Township 84 North, Range 47 West and in partial Sections 19 and 30 of Township 84 North, Range 46 West it shows the development of a sandbar of rather substantial size which is obviously a point bar that has begun to develop by virtue of a change in the course of the upstream channel of the river (2650:6-2652:13). Because of the angle of the river channel upstream from the area where the Fairchild Survey map locates the Sandbar (See Tribe's Exhibits 102, 103), the river would have been eroding the right or Nebraska bank at a point upstream from the sandbar. This erosion would, according to the expert testimony, be very likely to deposit sand in the area depicted as sandbar in the Fairchild map. The formation of this bar began

to occur sometime after 1894 and before the time of the 1912 Fairchild survey. The authenticity of the sandbar as shown on the Fairchild survey is challenged by the plaintiffs. They imply that the bar was mapped by someone other than Fairchild (perhaps Mitchell Vincent) or that the map was in some manner "doctored" either by the defendants or someone on their behalf (3143:12). A careful examination of the exhibit, together with other evidence and expert testimony as to the behavior of the Missouri River, leads the court to the conclusion that this exhibit is authentic and of assistance to the court. The defendants introduce in evidence Exhibits A through P. These exhibits are a series of letters from the Omaha Indian Reservation Agency Superintendent to the Commissioner of Indian Affairs during the period from 1907 and continuing until 1922. Thus, while they were not written by hydrologists they are accounts of the river's behavior which were prepared at a time when few reliable maps of an official nature are available, and are based on actual observation. They deal with the request by certain Indians of the Omaha Tribe or their heirs requesting that their allotments which had previously been granted to them of lands within the Omaha Indian Reservation be exchanged for new allotments. The reasons stated for the exchange requests were that the land originally allotted to the allottees was or had been washed away by the Missouri River. To better understand the relationship of these allotments and the relationship of the allotment exchange letters previously referred to, the court has examined Exhibit T80. The area in orange shown on Exhibit T80 is land which has never been allotted to any member of the Omaha Tribe and has never been patented by the United States Government to anyone; the area in

green represents allotments which have been relinquished and are directly related to Exhibits A through P; the cross-hatched areas are lands which have been sold or otherwise left their trust status after the 1854 Treaty.

The plaintiffs disregard and disavow any significance to the allotment exchange letters (Exhibits A through P) (1135:18-1136:14) and assert that the verbiage used in the allotment exchange letters describing the action of the Missouri River as "washing away" the allotment lands is only the description of a nonprofessional person, unfamiliar with the action of the river. They conclude that the land was not "washed away" as described in the letters, but rather simply inundated by high water flows during stages when the river was in flood. The defendants on the other hand relate the allotment exchange letters to the formation of the sandbar as shown by Fairchild in his 1912 survey. Exhibit F-4 was prepared by witness Huber, from the information contained in Exhibits A through P, S and T19. Mr. Huber then reconstructs what he believed to be the location of the right bank of the river in 1912 (2054:22-2059:7) in order that the right bank position might be compared with the location and position of the sandbar as shown by Fairchild. This reveals that the right bank, as reconstructed by Huber is consistent with the Fairchild sandbar. In support thereof, defendants, also introduce a sketch of the 1907 and 1908 river by one Thomas R. Ashley and a letter from the Superintendent of the Omaha Agency to the Commissioner of Indian Affairs enclosing a copy thereof which is dated October 23, 1908 (Exhibit R). The Ashley sketch and the letter to which it is attached describes the action of the Missouri River during that period as it relates to lands which are now located in Sections 24,

25, and 36 of Township 83 North, Range 47 West. The sketch of Mr. Ashley indicates that the river during that period is migrating in a southerly direction eroding against the right bank of the river washing away Indian allotment land and producing deposition on the left bank which is accretion to the Iowa riparian owners. Of some significance in this regard is also an Omaha Reservation Plat made by Reservation Farmer Corney O. Preston which is dated in May, 1914 and received in evidence as Exhibits I-4 and J-4. The witness Huber then prepared Exhibit L-4 which is a composite map showing the Fairchild survey as shown in Exhibit Q with the right bank line from the Preston plat (Exhibit I-4) and a reconstruction of a plat showing the allotted lands reportedly eroded away from the letters Exhibits A through P, as shown by Exhibit F-4 (2063:2-2064:7). The end result of all this tends to show the authenticity and reliability of the allotment exchange letters as they relate to the action of the Missouri River during this period of time.

In the light of the Indian allotment exchange letters, the Preston map and the Ashley sketches, the sandbar shown on the Fairchild 1912 survey becomes increasingly significant. It is the position of the plaintiffs in this case that the river was against the northerly high bank in about 1912. The witness Clark is of the opinion that the river left the northerly high bank in a sudden noticeable movement by one or more avulsions to reach its position in 1923 (455:7 and 524:19), however, he doesn't know how many (639:11) and he could find no records (779:20). He comes to this opinion because of the fact that there are sloughs running next to the northerly high bank which are the remains of the 1912 main channel. The sloughs to which Mr.

Clark makes reference are primarily in Sections 19, 20, 28 and 33 in Township 84 North, Range 46 West. The remnants of these sloughs are evident on the ground today. The witness Dr. Robinson is of the opinion that between 1908 and 1916 there were several high water times which produced a change in the river to the south and it moved over toward the Nebraska bluffs and inundated the Barrett survey area and reached its 1923 position. It is his opinion that this occurred suddenly during one high water period (1067:13-1068:16).

Without commenting on the inconsistencies between the opinions of the witnesses Clark and Dr. Robinson, the Court believes that the following evidence contradicts those opinions:

(a) The slough areas found in Sections 19, 20, 28, 29 and 33 of Township 84 North, Range 46 West are more representaive of the so-called "Iowa Chute" than they are evidence of avulsions. As earlier indicated, an avulsion normally leaves a prominent landform remnant such as Blue Lake, which is shown on the 1946-47 Corps of Engineers Sheet #72. (Exhibit U-8); or Badger Lake (Exhibit N-7A) or Lake Quinnenbaugh (Exhibit P-3) (2593:18-2594:6). These lakes, formed by avulsive cutoffs, are sufficiently wide to indicate that they lie in an intact abandoned channel, rather than a remnant of a channel. The Court believes that if an avulsion had occurred between 1912 and 1923 a landform remnant should have remained against the northerly high bank which would bear a reasonable resemblance to the lakes above referred to. The sloughs which remain are considerably more narrow and of less depth than would be evidenced by a sudden channel change which would leave the old river channel in place (2827:13-2828:17).

(b) Exhibit P-8 is an aerial photo mosaic of aerial photographs taken by the Corps of Engineers in 1925. Dr. McQuivey, a river hydrologist testified on behalf of one of the plaintiffs. It was his opinion that this aerial photograph showed evidences of many old channels which developed as the river progressed from the northerly high bank to its 1923 position. It was his opinion that these were main channels at one time. He marked on said exhibit in red the outlines of the old channels as he saw them (1683:23). His testimony is consistent with that of the witnesses of the defendants who state that after the river moved to the northerly high bank it then began to erode to the south during periods of high water depositing accretion materials to the left or Iowa riparian land as the progression took place (2679:10-2682:11; 2134:24-2139:2; 2967:1-2968:9). This is consistent with the sketch of Mr. Ashley, the Indian allotment exchange letters indicating erosion against the right bank with resultant deposition against the left bank, with the formation of the sandbar as shown by the 1912 Fairchild survey and with the testimony of Judge Prichard who was on the land in 1919 and described it as being all "bar" land with scattered sloughs, lakes, small willows no higher than a horse and a few scattered cottonwood trees 2432:4; 2423:12; 2435:9). It is also consistent with the angle of approach by the upstream channel as is shown by the Fairchild survey (Exhibit Q-8) (2650:6-2652:13).

(c) Plaintiff's witnesses acknowledge that there was an extremely wet cycle from at least 1910 to 1917 or 1918, as shown by the hydrograph prepared by the Witness Clark, as Exhibit T-112 (505:11). Mr. Clark likewise admitted that his Exhibit T-104 shows high water periods substantially above the elevation of 1045 feet in years 1905, 1906, 1912, 1913, 1915, 1916 and 1920. (578:17; 580:10-17). To like effect is the testimony of plaintiff's witness Dr. Robinson (1052:15; 1062:1). The witness, Ross Willey, then age 13, observed the river during the June rise in 1916. He marked on Exhibit M-5 the position along the northerly high bank where he rode on horseback and observed the river (2008:8). He could see out across the main channel and could see the town of Decatur, and between where he sat on horseback and the town, he could see some bayous, water at different spots, weeds, small brush and bare spots where sand blows (2402:7). In 1920 he became aware that Joe Kirk was trying to grow some sweet clover and alfalfa on some of the bare land that was just a little south and west of the present-day buildings; there were still a lot of sloughs and standing water areas and Kirk was doing a little clearing (2404: 23). Kirk continued in possession from 1920 until he sold out to the Petersons and was there every year farming and clearing (2413:25). In 1919, Judge Prichard then a young lawyer, age 25, went on the bar with Joe Kirk in August or September. He marked on Exhibit J-5 the point where he and Kirk crossed the Iowa Chute with saddle horses (2423:3). He describes the area as "new bar land," with lots of small willows,

sand dunes and small cottonwoods as big as maybe an inch and a half (2424:5). He saw no indication of any land that could be called land in place, other than the bar land, and no trees except new growth (2424:23). He and Joe Kirk rode over the entire bar looking at the river, and just generally looking over the land. There was water standing in low places (2430:9). He describes the area to the north and west of where they entered the Kirk property as "just sandbar" with little willows and sand dunes and once in a while a patch of cottonwoods that they could ride through without any trouble (2432:4.) During this ride with Joe Kirk, he did not see any indication of any trees or land that appeared to him to have been cut off from the Nebraska side of the river. It just looked like "all new bar" to him (2433:12). The whole area looked to him as if it had started building up in the north end and had built gradually southward. It was many years before the southern land built up to that closer to the north high bank (2437:23). He had observed the formation of land in this manner in other bends of the river because his family was interested in similar land called Hedges Bar. He describes the formation as a bar in the river with the water flowing on both sides and then it would close up at the upstream end and leave a kind of old remnant of the channel lying up against the high bank, which was called the Iowa Chute (2440:6). The descriptions of the land by witnesses Willey and Prichard, who have absolutely no interest in the outcome of this litigation, is certainly the only clear picture of the land as it appeared at that time. If the land had been land in place as indicated by Clark and Dr. Robinson,

it would have had more vegetation growing on it and vegetation should have been much taller than is described by the witnesses. The Court can conclude that the land described was formed by the gradual erosion of the river southward from the northerly high bank, with the deposition occurring on the Iowa side of the erosion, leaving sandbars, sloughs, bayous and other landform remnants which are typical of that type of river movement (2079:11). This lay testimony, based on actual observations, is of considerable significance.

(d) Another line of evidence in which the Court places reliance is the matter of the slope and gradient of the land throughout the entire Blackbird Bend area as it exists today. Dr. McQuivey's profiles of the Blackbird Bend area (Exhibit G-154) indicates the slope and gradient of the land as it presently exists to be generally sloping from the west to the east (1620: 25). The topographic cross-sections prepared by Dr. Hallberg (Exhibit W-8) reveals that those cross-sections show a general gradient and slope from the northwest to the southeast, so that surface water would drain through the area generally from the northwest to the southwest (2679:10-2682:11). This is consistent with the testimony of Drs. Hallberg and Kennedy, as to the manner in which the river migrated through the entire Blackbird Bend from the time when it reached the northerly high bank after 1890, until it reached its 1923 position, as shown by the Corps of Engineers. It is inconsistent with the theories of Mr. Clark and Dr. Robinson, who claim that the river migrated to the north and east after 1890, eventually reaching the northerly high bank and then jumping suddenly to its

1923 position. If this were in fact the case, as the Court understands the expert testimony, the slope and gradient for the drainage of surface waters should be to the northeast, rather than to the southeast as is indicated by the cross-sections.

This might also be a pertinent place to comment upon an inconsistency which in the Court's mind is of no small significance. It is the plaintiff's claim that whenever the river moved to the east to the easterly high bank and whenever it moved to the north and east to the northerly high bank, that it did so by the process of erosion against the left or Iowa bank, with corresponding accretion deposits to the right or west bank. However, whenever the river moved to the west or to the south, the plaintiffs claim that it did so by a "jumping action" so as to qualify in the eyes of the law as an avulsion. It strikes the Court somewhat strange that the river would move in two directions by erosion and in the two opposite directions by avulsion; in this regard, defendant's have introduced evidence to the contrary (2601:22-2602:15; 2642:22-2643:12). A study of the Corps of Engineers maps from 1923 until as late as 1940 does not indicate to the Court in any manner that the river was "jumping" from one channel to another during that period of time (2967:1-12); and a careful study of the maps reveals that whenever the river moved it always moved by erosion, whether it be east or west, north or south. This factor, coupled with a lack of any substantial evidence that the land was left as identifiable land following a particular movement lends considerable credence to the theory of the

defendants while leaving considerable suspicion as to the theory of the plaintiffs.

(e) There is evidence in the record of a cottonwood tree which is 67 years old (1373:25) that was standing alone in Section 24, Township 84 North, Range 47 West. This tree was marked on Exhibit T-101, Exhibit T-105, Q and T-105A. The plaintiffs claim that the age of this tree supports their contention of an avulsion between 1912 and 1923, because if the tree was sixty-seven years old it had to have started growing in about 1908 or 1909; therefore, if the river had moved away from the northerly high bank by erosion, the tree should have been swept away by the action of the river. This assumes that the river was against the high bank in 1912, but there is some evidence that the river had left the northerly high bank by 1907 or 1908 (Exhibit R—Ashley sketch of 1907 and 1908 rivers). This Court is unwilling, on the evidence, to join in the assumption that the river was at its northernmost position in 1912. It appears that the most that can be said about the northernmost position is that it was reached at some point between 1890 and 1912, but probably prior to 1912. The defendants on the other hand, contend that this tree was growing on the Fairchild sandbar and that explains its age. The location of the tree is marked as red dot surrounded by a circle by the Witness Virtue on Exhibit Q and is shown as being located on the edge of that bar. Plaintiff's witness Clark located the tree at a point 100 feet from the edge of the Fairchild sandbar (Exhibit 105-F). The Court is satisfied that when Fairchild made his survey in

1912, he did not survey the sandbar and, therefore the precise location thereof is not to be assumed from the survey map. This conclusion is supported by the fact that Judge Prichard saw no trees of any size in 1919. It is the Court's opinion that it is more likely that this tree commenced growing on the Fairchild bar than it is that the river moved avulsively as claimed by the plaintiffs. This conclusion is reached because of the fact that the lay and expert testimony most credible to the Court demonstrates that the river's change at this time was erosive and accretive rather than avulsive.

FINDINGS BY THE COURT—1879-1923

The Court therefore concludes from a review of all of the evidence in this case, including the maps which are pertinent to the time period between 1890 and 1923, that the plaintiff's evidence falls far short of the evidence which would be necessary to prove an avulsion or avulsions. To the contrary, the testimony of the defendants' lay and expert witnesses, is the most clear and convincing to the Court's mind. Therefore, for all of the reasons which have heretofore been stated, the Court finds that there were no avulsions in the Blackbird Bend area between 1890 and 1923, and that the movements of the river during that period of time were erosive in nature so that accretion was being formed on the side of the river opposite the erosion. The Court finds that after 1890 the river moved erosively until it reached what is now the northerly high bank following which it commenced a southern migration throughout the Blackbird Bend area until it reached its 1923 position. This migration eroded

almost all of the westerly end of the land as surveyed by Barrett in 1867 and the deposition which occurred during the southerly migration of the river was accretion to the northerly and easterly high banks and thereby became accretion to the Iowa riparian owners. The Court is satisfied that no other conclusion is tenable from the evidence in this case.

G. THE RIVER FROM 1923 TO 1940

Generally, the witnesses are in agreement as to the interpretation of the Corps of Engineers maps, the first of which was made in 1923, and is in evidence in this case as Exhibits W-04; T-35 and T-105, composite. The 1923 map shows the river running generally in a north-south direction through the westerly end of Blackbird Bend, until it reaches a position in Iowa Section 36, Township 84 North, Range 47 West, when it makes a 90 degree angle turn to the east, where it traverses Iowa Sections 31 and a part of 32, Township 84 North, Range 46 West, whereupon it then turns south again and passes out of the right bank meander as surveyed by Barrett. In view of the conclusions heretofore reached by the Court, the land lying east and north of the river in its 1923 position, has already been determined to be accretion land to the Iowa riparian owners. Therefore, the remaining question as to the migration of the river in this period of time is as to that land still within the Barrett meander survey line, which lies adjacent to the right bank of the 1923 river. Necessarily, an examination must then be made of the river as surveyed by the Corps of Engineers in 1927. The 1927 maps are received in evidence as Exhibits W-S4, T-36, and T-106, composite.

It is apparent from an examination of the exhibits that after 1923 the river moved slightly to the east and then migrated south and west, leaving behind it a large point bar identified on the 1927 maps as "Low Bar". This low bar shows the remnant 1923 or later channel which is mapped by the Corps of Engineers as a "slough". Some other minor channel remnants are seen sticking into the low bar like fingers from the easterly side thereof. By 1927 the Corps has mapped the landforms (i. e. trees, bars, swamps, lakes, etc.) within the entire Blackbird Bend, which was not done by the Corps on its map in 1923. Although plaintiffs' witnesses disagree to some extent with the Corps mapping, the Court is of the opinion that the Corps of Engineers was in a better position in 1927 to verify the accuracy of its mapping than the plaintiffs would be by the current use of photo-interpretation of aerial photos made in 1925. On the 1927 map and east of the former 1923 river is shown large areas of marsh and lake, which the Court believes is further evidence of the southerly migration of the river after 1890. The 1927 map clearly indicates that much of the land was just beginning to develop as accretion to the Iowa riparian owners (2693:12-25; 2702:6-15). The vegetation shown on the 1927 map is likewise consistent with the testimony of Judge Prichard, who had been on the land in 1919. The low bar area shown on the 1927 map, is the beginning of accretion land to the Iowa riparian owners in Sections 32 and 31 of Township 84 North, Range 46 West. The movement of the river between 1923 and 1927 was by erosion against the right bank and accretion deposition to the left bank.

The river from 1927 to 1940 is likewise fairly clearly traced. Private levees were constructed by Joe Kirk and later the Corps of Engineers constructed some pile dikes and an abatis to begin to train the river into its designed alignment. The 1937 reconnaissance map, Exhibit W-B5, shows some of the changes in the condition of the river from its 1930 alignment. These dikes and abatis had the effect of forming accretion to the Iowa riparian land adjacent to the dikes (2093:24). There is no evidence between 1923 until 1940 of any avulsion that occurred through the natural forces of the river or through man-made levees, dikes or abatis (2103:1).

FINDINGS BY THE COURT—1923-1940

Therefore, the Court finds and concludes that all of the land formed to the east of the Missouri River as its channel was located in 1940, was accretion, either natural or man-made to the Iowa riparian landowners.

In 1943, the States of Iowa and Nebraska entered into a Compact Agreement which was based upon the 1940 position of the Missouri River in the Blackbird Bend area (Exhibit W-F5). The compact between the two states concluded once and for all that the land lying easterly of the compact line was located within the State of Iowa and that land lying westerly of the compact line was located within the State of Nebraska. The location of the compact line is not in dispute in this suit and, therefore, the Court must finally conclude that all of the land lying east of the 1943 Iowa-Nebraska compact line is accretion land belonging to the Iowa riparian owners and is not owned by nor subject to claim by the Omaha Indian Tribe, or the United States of America, as Trustee for said tribe under the Treaty of 1854.

Although these factors did not influence the decision of the Court in these findings, the Court feels compelled to comment upon the history of the activities of the defendants and their predecessors as it relates to the Blackbird Bend area. The evidence is without dispute that the Omaha Indian Tribe has not been in either possession or occupancy of the land within the Barrett Survey Meander since 1912 or before. There is considerable evidence in the record that the defendant's predecessor in title, Joe Kirk, came upon the land in approximately 1915 and commenced to clear and farm such areas of it as could be made farmable. From that time forward, the land was in the process of being cleared, drained, leveled, and improved for agricultural purposes by Kirk and others. There is in evidence in this case a certified copy of the Judgment and Decree of Cause No. 10093, District Court of Iowa in and for Monona County, entitled *George D. Whitney v. Joseph A. Kirk and Bertha Kirk,* wherein the Iowa District Court on November 30, 1928, concluded that Joseph A. Kirk was the owner of the Northeast Quarter of Section 19, Township 84 North, Range 46 West, lying upon the high bank, and that all land lying adjacent thereto was accretion land and as such, Kirk was entitled to title and possession of all lands lying south of a line commencing at the southwest corner of the Northeast Quarter of Section 19, Township 84, Range 46, and running in a southwesterly direction at right angles to the bed of the Missouri River and between said line and a line commencing at the southeast corner of said Northeast Quarter of Section 19 and running south to the bed of the Missouri River (Exhibit W-CC). Although this Court realizes that that judgment and decree

is not binding in any way upon the Court at this time, it is simply a further indication, from a different source, assumedly based on the evidence of witnesses at that time, that the land in Blackbird Bend lying southerly of the northerly high bank was formed by the process of accretion. Also in evidence, are Wilson Exhibits AA and BB, which are quiet title actions brought by the defendants or their predecessors in interest, of substantially all of the land with the Barrett Meander Survey, which quieted title to the riparian owners in 1962 and 1963 as against all persons except the United States. Finally, there is evidence in this case Exhibit W-D3 which is the Certificate of the Monona County Treasurer, showing payment of the taxes on the land within the Blackbird Bend by the defendants or their predecessors, since said land was placed upon the tax rolls.

There is no evidence of any possession by the Omaha Indian Tribe or of any improvements to the land by the Omaha Indian Tribe at any time even since temporary possession was granted by this Court by Temporary Injunction in 1975. All of these factors are of significance to the ultimate disposition of this cause as historical facts which have assisted and aided the Court in reaching a final determination.

H. FINDINGS OF FACT ON THE MERITS

From all the evidentiary matters heretofore discussed, the COURT FINDS:

1) That the movement of the river from its 1867 position to its 1879 position was by gradual erosion against the banks of the river resulting in accretion

deposition opposite the erosion; that there is no clear and convincing evidence of an avulsion during that time period which left land which could then or can now be identified as land in place.

2) That after 1879, the river moved erosively until it reached the present northerly and easterly high bank, sometime after 1890.

3) That after reaching the northerly and easterly high bank, the river then commenced a southern migration, eroding the right or Nebraska bank as it moved and depositing accretion on the left or Iowa side of the river until it reached its 1923 position as shown by Exhibit W-04; there is no satisfactory evidence of an avulsion which occurred between 1890 and 1923.

4) That after 1923 the river continued to move southerly until 1927. After 1927 the movements of the river were primarily east-west within the western end of the Barrett Survey but in all instances the movements were erosive in nature and not avulsive.

5) That by 1940 all of the land previously formed within the 1867 Barrett Survey had been eroded away by the action of the river leaving no identifiable land in place and the new land within the Barrett Survey and easterly of the center of the 1940 river in Blackbird Bend was accretion to the Iowa riparian land to which it had attached.

6) The land owned by Roy Tibbals Wilson, RGP, Inc., Charles Lakin, Harold M. Sorensen and the State of Iowa lying within the Barrett Survey of 1867 and lying east of the 1943 Iowa-Nebraska Compact line is accretion

to Iowa riparian land and neither the United States of America nor the Omaha Indian Tribe has any right or claim thereto.

7) The Omaha Indian Tribe has not been in possession for at least 40 years or more of the land referred to in the preceding paragraph but rather the defendants or their predecessors in title have been in possession.

8) As to Travelers Insurance Company, they are a mortgagee only and as such have not been in possession or dictated the use of said land.

From the foregoing Findings of Fact, the Court now makes the following:

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CONCLUSIONS OF LAW

I.

The Court has jurisdiction of the parties and of the subject matter in controversy in these consolidated cases. The claims asserted herein by the plaintiffs, Tribe and the United States of America, arise under a Treaty of the United States and involve sums in excess of $10,000, exclusive of interest and costs. Jurisdiction is, therefore, conferred upon this Court by 28 U. S. C. §§ 1331, 1345 and 1362.

II.

As discussed in the Memorandum Opinion on file herein, state law applies in determining this dispute, and plaintiffs are entitled to rely on Nebraska law to prove their title.

III.

The burden of proof is upon the plaintiffs, Omaha Indian Tribe and United States of America, to prove their title to the land in dispute. The defendants also have the burden of proving the allegations of their counterclaim seeking quiet title relief. As discussed in the Memorandum Opinion on file herein, this Court concludes that neither plaintiffs nor defendants are benefitted by any presumption or other transfer of the burden of persuasion, and that this Court's findings are supported in this case by a clear and fair preponderance of all of the evidence.

IV.

The plaintiffs failed to sustain their burden of proving that any sudden change of the Missouri River channel occurred in the Blackbird Bend area detaching a block of Omaha Indian Reservation land from the Nebraska bank to the Iowa bank, which land was capable of identification as such, either during the period from 1867 to 1879, 1906 to 1923, as contended by the plaintiffs, or at any other time material herein.

V.

The defendants on the other hand, by their evidence have proven that the original Omaha Indian reservation land within the 1867 Barrett Survey has subsequently been washed away by the Missouri River and occupied by the bed thereof and that at the same time new land was added to the Iowa riparian land, from the owners of which defendants derive their title, by the gradual

process of deposition within the Blackbird Bend area and specifically the land within the Barrett Survey to the 1943 Nebraska-Iowa compact line.

At this point two observations about this litigation are in order: First, the *crucial* factual issues in dispute are relatively few; in fact, the testimony of the defendants' experts and the government's expert can to a large extent be reconciled. Secondly, there is at the core of this litigation a sharp dispute as to the legal classification of certain river movements which the evidence reveals. This is a lawsuit in which certain findings of fact, even if agreed upon, would not lead in the minds of all parties concerned to a definite legal conclusion; *i. e.* that either an avulsion or an accretion took place at key times in history at particular places on the Missouri River. It appears in this case that even if findings of fact could be agreed upon, the legal conclusions to be drawn from them would be vigorously disputed. This Court believes that a discussion of this problem of fitting the evidence into legal categories can make this Court's opinion more comprehensible. The dimensions of what is essentially a legal dispute are easily lost amid the wealth of evidence which was elicited to support very specific findings of fact.

The events which the Court is obligated to reconstruct occurred long ago and they were events of nature; so far as we know these events were not observed in their entirety by any person who could today be a witness concerning them. Indeed, there is some lay testimony that constitutes direct evidence relative to river movements early in this century, but none of this evidence in and of itself is sufficient for the construction of an overview of

the river's actions at key times in history in the Blackbird Bend area. Yet an overview, not mere fragments of data, is a necessary predicate for conclusions in this case. Fact-finding must be, therefore, the creation of a synthesis of the fragments of data that pertain to the natural history of the Missouri River in the Blackbird Bend area.

In the process of pulling together the extensive and complicated evidence presented in this case, it becomes apparent that the movements of the Missouri River have not been so clean and precise that they easily fall into the legal categories conveyed by the terms "accretion" and "avulsion". This is *not* to suggest that at this time, after thorough examination of the evidence and the law, this Court holds an ambivalent attitude as to what legal conclusions should be drawn. This Court is convinced that one particular set of conclusions can be squared with the evidence far better than other proposed conclusions. We do suggest, however, that where the law demands precise concepts, nature has supplied the rather erratic behavior of the Missouri River. Holding up the concepts of accretion and avulsion and matching these concepts with our reconstructed view of former river movements is no easy task. The task requires intense analysis and very precise conceptual thinking.

The complexity of the evidence has required this Court to reflect upon the precise meaning of the terms "accretion" and "avulsion" in light of the evidence elicited in this case. In so doing it has become apparent that rendering a decision on the merits means not only that certain proposed findings of the plaintiffs must be re-

jected but also that certain erroneous legal thinking of plaintiffs must be rejected. Both government counsel and the Tribe's counsel have proceeded throughout this lawsuit with certain presuppositions as to what is required to prove either an accretion or an avulsion. These presuppositions are, in part, at variance with the legal meaning of the terms accretion and avulsion as this Court understands them. These differences in conceptualizing the requirements for a conclusion of accretion or avulsion are slight, but they are crucial and must be noted if the reasons for this Court's conclusions are to be comprehended.

The differences between the government's theory and the requirements of the law can best be illustrated by concentrating on the meaning of the term "avulsion". The government's pretrial statement of its theory of the case studied in conjunction with the testimony elicited by the government from its expert leads us to the following conclusion: the government's theory rests upon the assumption that the foremost and perhaps the single criterion for classifying a river movement as an avulsion is a sudden movement of the thalweg; thus under the government's theory an avulsion can be defined with no reference whatever to river banks or other land forms. That assumption, we believe, cannot withstand critical scrutiny.

Assume that a stream evolves to have a braided character, *i. e.* it has several channels of various depths, the deepest of which contains the thalweg. According to the government's theory of avulsion, if the deepest channel begins to fill in with silt, then a point in time will come when another channel is deeper; hence, a new thal-

weg will suddenly appear. This sudden movement of the thalweg or emergence of a new thalweg, it is asserted, has the character of a "jump" and indicates that an avulsion has taken place.

The government's theory would compel us to recognize "jumps" (*Ergo* avulsions) under many other circumstances. If the thalweg were hard against one bank of a river prior to an inundation and subsequent to the inundation appeared suddenly at another place in the river, the government's theory would no doubt necessitate the conclusion that an avulsion had occurred in view of the obvious fact that the thalweg had moved suddenly, in a few hours or a few days, to a new location.

That idea of an avulsion is innovative and thought-provoking but it cannot be reconciled with the common law legal concepts which we discussed earlier in this opinion. The government's criterion for recognizing an avulsion, a sudden movement of the thalweg, is inadequate to provide the conceptual framework for the resolution of this dispute if the Court adheres, as it must, to the common law concepts of accretion and avulsion.

The reasons are obvious. The government would have us recognize avulsions in a variety of river movements that leave no commonly accepted indicia of an avulsion, particularly land in place and an abandoned channel. Moreover, if the indicia of avulsion are cast aside, then the distinction between accretion and avulsion will become virtually meaningless.

The experts uniformly state that lateral river movements do not occur at a constant rate, for example, X

feet per hour or per day. Due to the tremendous number of variables involved, movements of the thalweg may be sudden, seemingly erratic, and in some cases not immediately perceptible to a lay observer. Carrying the government's theory to its logical conclusion, many river movements historically known as accretions would be thrown over into the category of avulsions insofar as they result from river movements that are sudden and where the movement of the thalweg could rightly be characterized as a "jump".

In short, even if the question of government counsel (whether the river was jumping around at the times and places in question) were answered in the affirmative, the conclusion of an avulsion would not necessarily follow. We will not go so far as to assert that an avulsion can only occur when there is a chute cut-off or a neck cut-off, but it is necessary that identifiable land in place and evidence of an abandoned channel be visible subsequent to a river change before it can be classified as an avulsion.

The government has, no doubt, derived this theory of an avulsion from a more "scientific" analysis of the river movements than that which underlies the common law. From our vantage point at this time, it seems that if plaintiffs were to prevail in this suit, it could only have been by convincing this Court that this more "scientific" view of river movements, which would require constant attention to only the position of the thalweg, would be somehow harmonious with the common law. The evidence is simply insufficient to support findings that the traditional indicia of an avulsion existed at the key points in time.

The differences between this Court's analysis of the law and the views of the Tribe's counsel can best be illustrated by focusing upon the meaning of the term "accretion". It seems to this Court that the vigorous cross-examination of the defendants' experts by the Tribe's counsel revealed an operating assumption that involves the concept of accretion; namely: Tribe's counsel assumes that a conclusion of accretion can never be made without a finding of continuity and contiguity between allegedly accreted lands and lands to which accretions allegedly attached. We find no error in this assumption itself, but do state that the terms "continuity" and "contiguity" themselves need to be analyzed. In this area the need for conceptual clarity is greater than ever.

Under the common law, as it is used in Iowa and Nebraska, a conclusion that accretion has occurred can only be made when land attaches to a shoreline; indeed, it is the growth of the shoreline that constitutes accretion. The accreted lands must, according to a commonly accepted doctrine, be above the ordinary high water mark. Therefore, continuity and contiguity are required and up to this point the reasoning of Tribe's counsel parallels that of this Court.

However, it appears that the view of Tribe's counsel is slightly but crucially at variance with this Court's understanding of what is required to prove an accretion. In this Court's view the twin concepts of continuity and contiguity do *not* require either the absence of any and all surface water on all accretion lands at all times subsequent to attachment nor do they require a level, uniform extension of the shoreline by homogeneous soil-building materials.

First, we will consider the significance, if any, of water on lands alleged to be accretions. It is clear to this Court that the process of accretion can and often does occur in such a manner that puddles, sloughs and stagnant back-water of various common and technical descriptions are present for many years on low-lying portions of accreted lands and often at the juncture of accreted lands and lands to which they attach. The water may be the result of rainfall, a high water table or periodic inundation. Whatever its origin, the presence of water part of the time or even permanently at some sites does not in and of itself defeat the conclusion that an accretion has occurred. There can be contiguity and continuity of the land despite the presence of some water. As long as the mass of land which is purportedly an accretion is attached to the former shoreline in such a manner that it appears to our common senses to be a growth of that old shoreline, then the land is accretion land.

It is this Court's view that the lands within the Barrett Survey area are now and for some time have been both continuous with and contiguous to the former Iowa shoreline. This means that they are accretion lands despite the presence of water which now and in earlier times interrupted to some degree the otherwise uninterrupted extension of the land.

We must also consider the question of whether the heterogeneous character of the soils throughout the Barrett Survey together with the vestiges of former river channels in that area defeat the conclusion that the area was formed by accretion. The answer is an unequivocal negative.

The soil throughout the area is *not* of a homogeneous composition. By the use of early aerial photography vestiges of former channels *can* be traced. This means that the Missouri River, to no one's great surprise, did not move at a uniform rate of speed at all times and did not pile up soils of a uniform character in the process. Yet, these facts do not negate the conclusion that the Barrett Survey area as it exists today is the result of a process of accretion; even less do they tend to prove an avulsion. This evidence is entirely consistent with the theory advanced by defendants. The key again is the growth of the shoreline. How that growth occurred, whether steadily or by jumps, whether uniformly or unevenly, is of no concern.

VI.

Judgment will be entered in favor of the defendants, RGP, Inc., Roy Tibbals Wilson, Charles E. Lakin, State of Iowa, Harold M. Sorenson, and Travelers Insurance Company quieting title in them to the Barrett Survey land in controversy in these cases claimed by them respectively as against the plaintiff, Omaha Indian Tribe.

VII.

The preliminary injunction herein granted on June 5, as extended and supplemented, will be set aside.

VIII.

There is no basis for an injunction against Travelers Insurance Company as prayed in 4024 either to put the Indians in possession or to enjoin against interfering

with possession and use by plaintiffs or as prayed in 4067 to enjoin from interfering with plaintiff's possession or denying access to or preventing harvest by plaintiffs.

IX.

Travelers Insurance Company has a valid and enforceable first mortgage lien against the land owned by RGP, Inc. which is superior to any rights of the plaintiffs.

The foregoing shall constitute this Court's findings of fact and conclusions of law, and this Court's Memorandum Opinion on file herein shall be deemed to be the basis for its conclusions of law.

Dated this 2d day of May, 1977.

By the Court:

/s/ Andrew W. Bogue
United States District Judge

Attest:
William J. Srstka, Clerk

By.....Deputy

APPENDIX C

UNITED STATES DISTRICT COURT

DISTRICT OF SOUTH DAKOTA

April 29, 1977

ANDREW W. BOGUE
U. S. District Judge

318 Federal Building
U. S. Courthouse
Rapid City, South Dakota 57701

Mr. William H. Veeder
818 18th Street, N.W.
Washington, D.C. 20006

Mr. James J. Clear
Department of Justice
Washington, D.C.

Mr. Thomas R. Burke
Mr. Lyman L. Larsen
1900 First National Center
Omaha, Nebraska 68102

Mr. Peter J. Peters
233 Pearl Street
Council Bluffs, Iowa 51501

Mr. Lowell C. Kindig
Mr. Maurice B. Nieland
300 Toy National Bank Bldg.
Sioux City, Iowa 51101

Mr. Donald E. O'Brien
922 Douglas Street
Sioux City, Iowa 51101

Mr. Edson Smith
3535 Harney Street
Omaha, Nebraska 68131

Mr. Jack W. Peters
501-511 Park Building
Council Bluffs, Iowa 51501

Mr. Bennett Cullison, Jr.
Harlan, Iowa 51537

Re: USA v. Roy Tibbals Wilson, et al., No. C 75-4024
Omaha Indian Tribe, etc. v. Harold Jackson, et al.
No. C 75-4026 Omaha Indian Tribe, etc. v. Agricultural Industrial Investment Company, et al., No. C 75-4067

Gentlemen: MEMORANDUM OPINION

This is a memorandum opinion prepared and filed by the Court for the purpose of setting out this Court's resolution of the choice of law problems presented by these consolidated Blackbird Bend-Barrett Survey Area cases. As will be discussed below, the choice of law problems are of primary importance in dealing with the allocation of the burden of persuasion in these cases, but would not be determinative of the general definitions of the terms accretion and avulsion.

I.

Generally, questions of title to land situated within a state are governed by that state's law, regardless of whether such questions are being litigated in state or federal courts. *Mason v. United States,* 260 U.S. 545, 43 S.Ct. 200 (1923). This general proposition extends not only to questions of legal title *per se,* but also to questions concerning the rights of riparian landowners to accretion lands. *Joy v. City of St. Louis,* 201 U.S. 332, 26 S.Ct. 478 (1906). The rule established by the case law has been incorporated into a codification known as the Rules of Decision Act, 28 U.S.C. § 1652, which provides:

> The laws of the several states, except where the Constitution or treaties of the United States or Acts of Congress otherwise require or provide, shall be regarded as rules of decision in civil actions in the courts of the United States, in cases where they apply.

The above-quoted statute does apply to disputes over title to land. *Mason v. United States,* 260 U.S. 545, 43

S.Ct. 200 (1923). Thus, unless federal law provides otherwise, state law would provide the rule of decision for this case. It should be noted at this point that, in the event state law does in fact supply the rule of decision, Fed. R. Evid. 302 would apply as well. Fed. R. Evid. 302 provides:

> In civil actions and proceedings, the effect of a presumption respecting a fact which is an element of a claim or defense as to which State law supplies the rule of decision is determined in accordance with state law.

See also Cities Service Oil Co. v. Dunlop, 308 U.S. 208, 60 S.Ct. 201 (1939).[1]

Before any discussion of the issue whether a provision in the Constitution, treaties or congressional enactments compels an exception to the rule that state law controls disputes over title to real property, the problem of which state law would apply should be dealt with. The land involved in this litigation was on the Nebraska side of the river as of 1867. The thalweg of the Missouri River was the Nebraska-Iowa boundary prior to 1943. *Nebraska v. Iowa,* 143 U.S. 359, 12 S.Ct. 396 (1892). Prior to the 1943 Nebraska-Iowa Boundary Compact, the movements of the river would be directly relevant (indeed, any accretion river movements would be controlling) on the location of the Nebraska-Iowa boundary. *Id.* With

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1 While the defendants here are urging the use of Iowa law in order to avail themselves of Iowa's presumption in favor of accretion, it is at least arguable that federal law may recognize a similar presumption. *See Mississippi v. Arkansas,* 415 U.S. 289, 94 S.Ct. 1046 (1974), *cf.* 78 Am. Jur. 2d 874, Waters § 427 (1975).

the 1943 Nebraska-Iowa Boundary Compact, one point became firmly established: regardless of who owns the Blackbird Bend area within the 1867 Barrett Survey Meander line, that area is on the Iowa side of the boundary. The difficulty here of course lies in the fact that significant changes in the location of the river occurred prior to 1943. The general choice of the problems created by this situation came to a halt in the case of *Nebraska v. Iowa,* 406 U.S. 117, 92 S.Ct. 1379 (1972). In that case the Supreme Court began by adopting the Special Master's finding

> . . . that by 1943 the shifts of the river channel had been so numerous and intricate, both in its natural state and as a result of the work of the Corps of Engineers, that it would be practically impossible to locate the original boundary line. 406 U.S. at 119, 92 S.Ct. at 1381.

The 1972 Nebraska-Iowa case began when Iowa claimed thirty separate parcels which were wholly on the Iowa side of the 1943 compact line. For purposes of resolving the choice of law issues, the Court divided the thirty parcels into two groups. The classification was based on whether the land in the parcels was formed before or after 1943. With respect to the parcels which were found by the Special Master to have been formed after 1943, the Court held that Iowa law would govern title disputes, except that claimants to those areas would have the opportunity to show good title under Nebraska law as of the 1943 Compact date. Significantly, the Court found that Blackbird Bend was one of the areas formed

after 1943. 406 U.S. 117 at 120 n. 4, 92 S.Ct. 1379, 1382 (1972)[2]

Thus, under the 1972 *Nebraska v. Iowa* decision, Nebraska law would provide the rule of decision for land disputes as to river changes occurring prior to 1943, and Iowa law would provide the rule of decision for changes occurring after that date. These guidelines would clearly apply if all of the parties to this lawsuit were private, non-governmental entities. Thus the issue to be resolved is whether the fact that the United States as trustee and the Omaha Indian Tribe as beneficiary are claimants to the land involved in this lawsuit creates an exception to the general rule that state law controls in land litigation.

Contrary to the government's assertion, the fact that the United States, as trustee for the Tribe, claims the land involved in this lawsuit does not make federal law controlling. *See Mason v. United States,* 260 U.S. 545, 43 S.Ct. 200 (1923); *see also United States v. Little Lake Misere Land Company, Inc.,* 412 U.S. 580, 595, 93 S.Ct. 2389, 2398 (1973); *Wright,* 14 *Federal Practice and Procedure,* 141 N. 4 (1976). The case of *Hughes v. State of Washington,* 389 U.S. 290, 88 S.Ct. 438 (1967), might arguably support an argument that the presence of the United States as a claimant converts the case to one governed by federal law. However, it appears that *Hughes* is limited to its somewhat unique factual situa-

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2 Of course, this finding is not *res judicata* as to the factual issues raised in the instant case, but serves only to help arrive at a practical resolution of the choice of law problems.

tion, which involved ocean-front property and thus was closely involved with the nation's international boundaries. *Oregon ex rel. State Land Board v. Corvallis Sand and Gravel Company,* — U.S. —, 97 S.Ct. 582, 590 n. 6 (1977).[3]

Further, the majority of cases which have decided the question have turned to state law to resolve questions of land ownership when Indian tribes are involved as claimants. In the case of *Fontenelle v. Omaha Tribe of Nebraska,* 298 F. Supp. 855 (D. Neb. 1969), *aff'd* 430 F. 2d 143 (8th Cir. 1970), Nebraska law was applied in an accretion-avulsion dispute between the Omaha Indian Tribe and private claimants who were descendants of, and traced their title back to, Logan Fontenelle, who had been a chief of the Omahas. *See also Herron v. Choctaw and Chickasaw Nations,* 228 F.2d 830 (10th Cir. 1956), which applied Oklahoma law in a title dispute between an Indian tribe and private claimants. Finally, the case of *Francis v. Francis,* 203 U.S. 233, 27 S.Ct. 129 (1906), upheld the determination of the Michigan Supreme Court that an Indian treaty reserved certain lands to individual Indians in fee simple, thus giving the individual Indians and their heirs the right to convey the land without restriction and making title in the land subject to an adverse possession claim. In *Francis,* the Supreme Court stated:

> . . . the construction of the treaty here involved, whereby the respective Indians named in its 3d article are held to have acquired by the treaty a title in fee to the land reserved to the use of themselves, has become a rule of property in the state where the land is situated. That rule of property should not be disturbed, unless it clearly involves a misinterpretation of the words of the treaty of 1819.

3 In any event, *Hughes* was concerned only with the question whether a title included accretion lands deposited subsequent to issuance of a patent, not whether accretion had in fact occurred.

In short, the fact that the United States and the Omaha Indian Tribe are claimants to the Blackbird Bend area within the 1867 Barrett Survey meander line does not, standing alone, alter the general rule that the law of real property ownership is found in the law of the state in which the property in question is situated.

Under the Rules of Decision Act, 25 U.S.C. §1652, the Constitution, treaties and Acts of Congress must be examined in each case to determine whether federal law supplants state law as the rule of decision.

The Constitution contains nothing which would compel an exception to the general rule. While it may be that the commerce clause, Article I, §8, Cl. 3, would empower Congress to mandate the use of federal law in cases such as this, Congress has not done so. It seems clear that neither the terms of the commerce clause nor reasonable inferences to be drawn from those terms compel abandonment of state law in this case.

An examination of the three treaties received into evidence which relate to the Omaha Tribe (Treaty with the Sauk and Foxes, et al., 1830; Treaty with the Oto, et al., 1836; Treaty with the Omaha, 1854), together with the "Documents of Selection" (under which the Omaha Tribe selected their reservation lands) discloses that nothing in these treaties and documents precludes the appli-

cation of state law. The only express limitations which the treaties place upon disposition of the lands are the restraints against alienation familiar to Indian law. To the extent that they supplant state law, such restraints do create an exception to the general rule that state law controls the tenure, transfer, control and disposition of real property. *Sunderland v. United States,* 266 U.S. 226, 45 S. Ct. 64 (1924).

Research has disclosed no Act of Congress which displaces state law with federal law in cases such as this. While there need not be an express repudiation of state law, there must be some indication of a need for the use of federal law, such as a case where federal land acquisition has ben part of an extensive federal regulatory program. *United States v. Little Lake Misere Land Company, Inc.,* 412 U.S. 580, 93 S. Ct. 2389 (1973). This Court is unable to discern any federal policy broad or strong enough to supplant the strong local policy concerning title to land. This case should be governed by state law. Virtually all of the analogous cases have used state law. In short, this case should be governed by the choice of law principles laid down in *Nebraska v. Iowa,* 406 U.S. 117, 92 S. Ct. 1379 (1972).

II.

Nebraska law recognizes and adheres to the principles developed at common law for the resolution of title and boundary disputes which arise when the contour of riparian land has been changed by a river's movements. Simply stated, when a river which forms a boundary between two parcels of land moves by processes of erosion

and accretion, the boundary follows the movements of the river. *Independent Stock Farm v. Stevens,* 128 Neb. 619, 259 N. W. 647 (1935). On the other hand, when a river which forms a boundary between two parcels of land abruptly moves from its old channel to a new channel through an event known as avulsion, the boundary remains defined by the old river channel. *Iowa Railroad Land Co. v. Coulthard,* 96 Neb. 607, 148 N. W. 328 (1914). The jurisdiction of Nebraska appliies these principles to the movements of the Missouri River. *DeLong v. Olsen,* 63 Neb. 327, 88 N. W. 512 (1901).

Nebraska law generally defines the process of accretion as the slow gradual and imperceptible addition by a body of water of solid material, made up of silt and sediment, against and to a shore line. *See Mercurio v. Duncan,* 131 Neb. 767, 269 N. W. 901 (1936). Accretions become attached to and extend an existing riparian shore line. *Jones v. Schmidt,* 170 Neb. 351, 102 N. W. 2d 640 (1930). Nebraska law also applies the law of accretion (*i.e.* that accretion land becomes the property of the riparian landowner of the land to which it attaches) to land uncovered by a process known as reliction. *Independent Stock Farm v. Stevens,* 128 Neb. 619, 259 N. W. 647 (1935). Reliction is defined as the process by which a gradual recession of water from a shore line uncovers land. *Id.*

One of the indicia of accretion is that the water's deposit of the silt and sediment along the shore line has been gradual and imperceptible. *Mercurio v. Duncan,* 131 Neb. 767, 269 N. W. 901 (1936). Nebraska law has objectively defined the terms gradual and imperceptible

to mean that, while an observer of riparian land could see from time to time that erosion had taken place and that deposits had been made, the process of erosion and deposition could not be observed while it was actually taking place. *Gill v. Lydick,* 40 Neb. 508, 59 N. W. 104 (1894). The fact that a gradual and imperceptible deposit of alluvion is one indication of accretion does not, however, mean that Nebraska law recognizes the length of time involved in a river movement as a strong element of an accretion case. This point is particularly important in the resolution of a dispute over whether a change in the location of the Missouri River has been by accretion or by avulsion. In the case of *DeLong v. Olsen,* 63 Neb. 327, 88 N. W. 512 (1901), the Nebraska Supreme Court rejected a contention that the law of accretion should not apply to the Missouri. The contention rejected in *DeLong* was based upon the generally acknowledged phenomenon that even erosive changes in the channel and banks of the Missouri River are too rapid and too perceptible to allow the land formed thereby to be termed accretion. *See Nebraska v. Iowa,* 143 U. S. 359, 12 S. Ct. 396 (1892). In the case of *Kinkead v. Turgeon,* 109 N. W. 744 (1906), *vacating* 74 Neb. 573, 104 N. W. 1061 (1905), the Nebraska Supreme Court discussed the vagaries of the Missouri River, and the following language of the *Kinkead* Court demonstrates that the amount of time involved in a river's change does not control the decision of whether the change was accretive or avulsive:

> It is a matter of public knowledge of which the court will take judical notice that that great river in this locality takes its course through a wide valley composed in the main of loose, sandy, and friable soil of great fertility; that it is subject to annual floods, sometimes of great extent and volume; that its course is erratic and tortuous; that sometimes during flood periods, its current will strike or impinge upon its banks at such an angle and with such effect, as, even in a single day, to undermine the same and cause large masses of soil to fall into the stream be disintegrated and thus whole farms are swallowed up with almost inconceivable rapidity, while in other localities hundreds of acres are often added to its banks by the process of accretion. It is further a matter of common knowledge that at a number of points along the northern and western boundary of the state the river has, as in this case, cut across the neck of a peninsula, entirely abandoned its old bed and left the former peninsula with the abandoned bed entirely across the river upon the eastern or northern bank and thus physically dissevered from the state of Nebraska and conjoined to Dakota, Iowa or Missouri. (Citations omitted.) 109 N. W. at 146.

Thus it may be said that, under Nebraska law pertaining to the Missouri River, the fact that a change in the channel and bank of the Missouri River has not taken place gradually in terms of an extended period of time does not dictate a finding that the change has not been wrought by an accretion. A case in point is *Conkey v. Knudson,* 143 Neb. 5, 8 N. W. 2d 538 (1943), *vacating* 141 Neb. 517, 4 N. W. 2d 290 (1942). *Conkey* involved a dispute among riparian claimants over land created when the Missouri River had, in the area in question, moved its channel over a mile north and east of its former location during a single high water period caused by a large ice jam. The trial court had determined that an accretion had taken place. In the first appeal the Nebraska Supreme Court concluded

that the determination of accretion was error, noting that the change:

> . . . was not gradual and imperceptible, but definite, sudden and certain as to time and extent. 4 N. W. 2d at 301.

In the first appeal the Court was so certain of its conclusion that an accretion had not taken place that it termed this conclusion as supported beyond a reasonable doubt by the evidence. 4 N. W. 2d at 295. Upon rehearing, the Nebraska Supreme Court reversed itself and vacated its former opinion. 8 N. W. 2d 538 (1943). In its re-examination of the case, the Court considered evidence that the vegetation in the area in question had grown there only since the change had taken place. The Court noted that the evidence tended to support a finding of either an accretion or a reliction, since

> The record does not disclose from what land, if any, the area was cut off by avulsion, or the situation existing from which it might be reasonably inferred that it could be identified as the same land that had washed away from some other survey tract or plot marked out on the river. 8 N. W. 2d at 541.

The Court further stated that the fact that the river had sought an entirely new channel as the waters receded from the flood did not rebut the conclusion that an accretion had occurred. Finally, the Court noted that, in cases involving the Missouri River, the transition of former river bed to arable land often takes place more rapidly after an accretion than after an avulsion, because avulsions often leave lakes which may exist for many years in the former channel bed.

One common thread running through the Nebraska cases involving accretions is the requirement that the river have moved its channel and banks through a process of erosion on one bank and deposition of silt and sediment on the opposite bank *See Wiltse v. Bolton*, 132 Neb. 354, 272 N. W. 197 (1937). In other words, the definition of accretion requires that a river, in the process of moving its channel location from one place to another, erode the land between its present and former channels and replace the eroded land with alluvion. In fact, where a river has changed its channel slowly without eroding the land in between, Nebraska does not apply the law of accretion. *State v. Ecklund*, 147 Neb. 508, 23 N. W. 2d 782 (1946). *Ecklund* held that

> . . . where a river changes its main channel, not by excavating, passing over, and then filling the intervening place between its old and its new main channel, but by flowing around this intervening land, which never becomes in the meantime its main channel, and the change from the old to the new main channel is wrought during many years by the gradual or occasional increase from year to year of the proportion of the waters of the river passing over the course which eventually becomes the new main channel, and the decrease from year to year of the proportion of its waters passing through the old main channel until the greater part of its waters flow through the new main channel, the boundary line between the estates remains in the old channel subject to such changes in that channel as are wrought by erosion or accretion while the water in it remains a running stream. (Quoting *Commissioners of Land Office of Oklahoma v. United States*, 270 F. 110, 113 (8th Cir. 1920) 23 N. W. 2d at 789-790.

Thus, it seems that, while the consistently intoned Nebraska definition of accretion includes the terms "grad-

ual and imperceptible," the process of excavation, or erosion and replacement by silt and sediment from upstream, is actually the linchpin of the application of the law of accretion. The process of accretion may be either rapid or gradual, at least in cases involving the Missouri River.

Nebraska law generally defines avulsion as a sudden departure by a river from its former channel and location in either a newly formed channel or pre-existing slough or high water channel. *Independent Stock Farm v. Stevens*, 128 Neb. 619, 259 N. W. 647 (1935); *Iowa Railroad Land Co. v. Coulthard*, 96 Neb. 607, 148 N. W. 328 (1914). While the key indication of an accretion is erosion, the key indication of an avulsion is that the land which is displaced in relation to the river, or remains while the river displaces itself, can be identified as the same piece of land as existed before the change. *Independent Stock Farm v. Stevens*, 128 Neb. 619, 259 N. W. 647 (1935); *Iowa Railroad Land Co. v. Coulthard*, 96 Neb. 607, 148 N. W. 328 (1914). For example, upon rehearing in *Conkey v. Knudson*, 143 Neb. 5, 8 N. W. 2d 538 (1943), *vacating* 141 Neb. 517, 4 N. W. 2d 290 (1942), the Court noted that one of the factors demonstrating that an accretion and not an avulsion had taken place was the absence of evidence showing that the land in question was identifiable as having remained intact through the substantial change in the channel of the river.

While the factor of time is not controlling in a finding of accretion, Nebraska law recognizes that avulsions are characteristically sudden and rapid in terms of time. *Frank v. Smith*, 138 Neb. 382, 293 N. W. 329 (1970). *Compare State v. Ecklund*, 147 Neb. 508, 23 N. W. 2d 782 (1946).

The Nebraska definition of avulsion often refers to an abandonment of a river's old channel. *e.g. Frank v. Smith*, 138 Neb. 382, 293 N. W. 329 (1940). The use of the term "abandon" implies that, in cases of avulsion, the old channel remains relatively intact and often continues to hold water for several years following the avulsive event. *See Conkey v. Knudson*, 143 Neb. 5, 8 N. W. 2d 538 (1943), *vacating* 141 Neb. 517, 4 N. W. 2d 290 (1942). This implication finds further basis in the fact discussed above that accretion is characterized by erosion. In other words, while an accretion would likely destroy the riverbank on the side of the direction to which the river moves, an avulsion is more likely to leave both sides of its banks relatively intact. Of course, where a bank is composed of point bar deposits, or sand and sediment, it may be more difficult to determine whether a bank and adjacent riparian land has remained intact through a change of a river channel. This Court does not mean to imply that movement by accretion, particularly one which occurs rapidly, will not leave behind sloughs or marshes which can be identified as remnants of the former channel. Because river movements, and accompanying scour, erosion and deposition, are not uniform, accretion deposits are not uniform. Therefore the river may not entirely fill in its former channel. *See Rupp v. Kirk*, 231 Iowa 1387, 4 N. W. 2d 264 (1942).

It may be noted that Nebraska law places the burden of persuasion upon one who seeks to quiet title, and that burden requires that the strength of the title of the one seeking to quiet title be shown, rather than weakness in the titles of adverse claimants. *Mitchell v. Beerman*, 175 Neb. 616, 122 N. W. 2d 525 (1963); *Bissel v. Fletcher*, 27

Neb. 582, 43 N. W. 350 (1889). The burden is so allocated even though a quiet title action is based on a claim of accretion as against adverse claims of avulsion. *Jones v. Schmidt*, 170 Neb. 351, 102 N. W. 2d 640 (1960). Iowa law, on the other hand, recognizes a strong presumption favoring accretion as opposed to avulsion. *Kitteridge v. Ritter*, 172 Iowa 55, 151 N. W. 1097 (1915).

Another significant difference between Nebraska and Iowa law which is relevant to this case is that under Iowa law the State of Iowa claims the beds of, and islands within, all navigable rivers within the state. *Holman v. Hodges*, 112 Iowa 714, 84 N. W. 950 (1901). *See also Nebraska v. Iowa*, 406 U. S. 117, 92 S. Ct. 1379, 1382 (1972). Nebraska law, on the other hand, gives a riparian owner title to the center of the main channel. *Independent Stock Farm v. Stevens*, 128 Neb. 619, 259 N. W. 647 (1935). Counsel for Plaintiffs herein make much of this distinction, arguing that Defendants cannot prove title by accretion unless they can demonstrate that the claimed accretion lands were attached to the riparian bank at a point above the ordinary high water mark. *See Dartmouth College v. Rose*, 133 N. W. 2d 687 (1965). However, assuming a failure of Defendants' proof on this point, that failure alone would not assist the Plaintiffs in their quiet title action, since they must demonstrate the strength of their title to prevail, and cannot rely on an alleged weakness in Defendants' title. *See* 65 *Am. Jur.* 2d 207-208,

Quieting Title § 78 (1972).[4] Such a failure of proof could at most adversely affect the Defendants' counterclaims to quiet title, upon which Defendants bear the burden of persuasion.

Apart from the differences just discussed, this Court wishes to note that it has researched both federal and Iowa laws of accretion and avulsion, and found that, as to definitions of those terms with respect to the Missouri River, there are no significant differences among federal, Iowa and Nebraska laws which are relevant to this case. *See Kitteridge v. Ritter*, 151 N. W. 1097 (Iowa 1915); *Wilcox v. Pinney*, 98 N. W. 2d 720 (Iowa 1959); *Nebraska v. Iowa*, 143 U. S. 359, 12 S. Ct. 396 (1892). Indeed, Nebraska law has relied heavily on federal law in formulating its definitions of accretion and avulsion. *See, e.g. Kinkead v. Turgeon*, 109 N. W. 744 (Neb. 1906), *vacating* 74 Neb. 573, 104 N. W. 1061 (1905); *DeLong v. Olsen*, 63 Neb. 327, 88 N. W. 512 (1901); *Gill v. Lydick*, 40 Neb. 508, 59 N. W. 104 (1894).

III.

The remaining question to be discussed in this memorandum concerns the allocation of the burden of persuasion. As noted above, generally a claimant, whether a Plaintiff or a counterclaiming Defendant, has the burden

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4 Thus, it has been stated that a Plaintiff has no interest in land if he himself does not own it, and that whomever the court determines to be the true owner is of no concern to him. Having failed to establish title in himself, he cannot complain of an insufficiency of the evidence upon which the court adjudged title to be in the defendant. (Footnotes omitted.) *Id.* at 208.

of persuasion in a quiet title action as to the strength of his or her own title. At times such a claimant may be aided in overcoming this burden by certain applicable presumptions.

In this case the Defendants urge that Iowa law applies and that consequently their evidence is buttressed by Iowa's presumption in favor of accretion. *See Kitteridge v. Ritter*, 151 N.W. 1097 (Iowa 1915). Because, under the case *Nebraska v. Iowa*, 406 U.S. 117, 92 S. Ct. 1379 (1972) Plaintiffs are entitled to rely on Nebraska law (which does not recognize presumptive accretion) in proving their title, this Court rejects Defendants' arguments on this point and declines to encumber Plaintiffs with the task of rebutting a presumption in favor of accretion.

Plaintiffs likewise contend that their case is assisted by reason of a reallocation of the burden of persuasion. The basis for their argument on this point is 25 U.S.C. § 194, which reads:

> In all trials about the right of property in which an Indian may be a party on one side, and a white person on the other, the burden of proof shall rest upon the white person, whenever the Indian shall make out a presumption of title in himself from the fact of previous ownership.

The above-quoted provision is, by its terms, triggered when an Indian person in a title dispute has offered evidence to show previous possession or ownership of the land in question. In this case, Plaintiffs could make out such a *prima facie* case by establishing that the land now within the Barrett Survey Line of the Blackbird Bend

Area is land (or accretions to such land-in-place) left undisturbed and in place through and following an avulsive change of the river channel. If Plaintiffs establish this fact, however, they have not only triggered the application of 25 U.S.C. § 194 but also have proved their entire case and established their right to relief in the form of a decree quieting title. On the other hand, if the land now within the Barrett Survey line is land which has accreted to the Iowa shore as Defendants claim, then the land which the Tribe possessed and owned at the time the Omaha Reservation was established has been washed away and replaced. If the evidence supports a finding that the land in question is accretion land to the Iowa shore, then Defendants have proved their case as well as overcome any burden which 25 U.S.C. § 194 might place upon them. In that event, the land now within the Barrett Survey Line simply would not be the land which the Tribe once possessed and owned, although it would occupy the same location. In short, the question whether 25 U.S.C. § 194 applies in this case is inextricably entwined with the merits.

In this connection, it should be noted that Defendants, or their predecessors in title, remained in continuous undisturbed possession of the land in question for over forty years. The Tribe, on the other hand, acquired peaceful possession only with the entry of a preliminary injunction order June 5, 1975. Prior to 1975 various officials and members of the Tribe had on several occasions attempted to enter and occupy the land in the hope of using the Tribe's sovereign immunity from suit to bar ejectment actions and thus obtain possession of the land. In light of these facts this Court is unwilling to find that

the Tribe has had possession of the land of a sufficient nature and degree to trigger the shift in the burden of persuasion apparently contemplated by 25 U. S. C. § 194.

In summary, this Court concludes that 25 U. S. C. § 194 is not applicable to this case. Even if it were, the proof necessary to trigger it would be the same proof which, by itself, would establish the Tribe's title to the land. Neither the parties nor this Court have been able to locate any directly relevant case authority which construes 25 U. S. C. § 194 in a situation like this. *cf. United States v. Sands*, 94 F. 2d 156 (10th Cir. 1938); *Felix v. Patrick*, 36 F. 457 (8th Cir. 1888), *aff'd* 145 U. S. 317, 12 S. Ct. 862 (1892). Thus, this case appears to be one of first impression. It seems to this Court that an application of 25 U. S. C. § 194 to an accretion-avulsion case such as this would be unreasonable and circuitous in view of the manner in which that application would mesh with the merits.

The practical result of this Court's refusal to apply either the Iowa presumption of accretion or 25 U. S. C. § 194 is as follows: 1) in order to obtain a decree quieting title in them, Plaintiffs have the burden of persuasion as to facts which establish their title; 2) similarly, Defendants bear the burden of persuasion on their counterclaim to quiet title; and 3) failure of either of the two groups of claimants to sustain its burden of proof does not, standing alone, entitle the other side to relief. This Court wishes to state, however, that, after thorough and careful review of the evidence, it is satisfied that its findings of fact are supported by a preponderance of the evidence and would not be altered by any different allocation of the burden of persuasion.

This Court has filed, in separate documents, its findings of fact and conclusions of law, and decree. This memorandum opinion has been prepared and filed for the purpose of expressing the legal analysis used by the Court in arriving at the rules of law applied in this case.

BY THE COURT:
ANDREW W. BOGUE, JUDGE
UNITED STATES DISTRICT COURT

APPENDIX D

UNITED STATES DISTRICT COURT FOR THE
NORTHERN DISTRICT OF IOWA
WESTERN DIVISION

No. C 75-4024

UNITED STATES OF AMERICA,

Plaintiff,

vs.

ROY TIBBALS WILSON, et al.,

Defendants.

No. C 75-4026

OMAHA INDIAN TRIBE, organized Indian Tribe pursuant to Act of June 18, 1934 (48 Stat. 984) as amended,

Plaintiff,

vs.

HAROLD JACKSON and OTIS PETERSON and the DISTRICT COURT OF IOWA IN AND FOR MONONA COUNTY,

Defendants.

No. C 75-4067

OMAHA INDIAN TRIBE, etc.,

Plaintiffs,

vs.

AGRICULTURAL INDUSTRIAL INVESTMENT COMPANY, et al.,

Defendants,

DECREE

(Filed May 4, 1977)

IT IS HEREBY ORDERED, ADJUDGED AND DECREED:

1. Each and every one of the foregoing Findings of Fact and Conclusions of Law are by this reference made a part hereof.

2. The clear and convincing evidence is that the original "Barrett Survey" lands and accretions thereto have been entirely eroded and washed away by the erosive force of the river since 1867. The land in this litigation was not left by avulsive action of the river, but was formed by accretion to the riparian land on the Iowa side of the river, commencing sometime after 1867 and defendants' title is derived therefrom.

3. Plaintiffs' prayers for relief are hereby denied, and judgment is hereby given to the defendants on their counterclaims, and as between the defendants on the one hand and the plaintiffs on the other hand, title to the Barrett Survey land is quieted in defendants as their respective interests may appear.

4. All prior injunctions or orders of this Court to the contrary are dissolved.

5. The preliminary injunction entered June 5, 1975, which gave possession of the Barrett Survey area to the Omaha Indian Tribe is hereby vacated, dissolved and set aside.

6. All monies from plaintiffs' farming operations which have been deposited with the clerk of this court

are the property of the defendants as their interests may appear.

7. Causes numbered C-75-4024 and C-75-4026 and that portion of C-75-4067 involved in this trial are dismissed, without costs to either party.

Dated this 2nd day of May, 1977.

By the Court:

/s/ Andrew W. Bogue
United States District Judge

Attest:
William J. Srstka, Clerk

By.....Deputy

APPENDIX E

STATUTORY PROVISIONS INVOLVED

United States Code, Title 25

§ 194. *Trial of right of property; burden of proof.*

In all trials about the right of property in which an Indian may be a party on one side, and a white person on the other, the burden of proof shall rest upon the white person, whenever the Indian shall make out a presumption of title in himself from the fact of previous possession or ownership. R. S. § 2126.

Derivation. Act of June 30, 1834, C. 161, § 22, 4 Stat. 733.

An act to regulate trade and intercourse with the Indian tribes, and to preserve peace on the frontiers, approved March 30, 1802, sections 4 and 12, 2 Stat. 139, 141, 143.

(1802)

Sec. 4. *And be it further enacted,* That if any such citizen, or other person, shall go into any town, settlement or territory, belonging, or secured by treaty with the United States, to any nation or tribe of Indians, and shall there commit robbery, larceny, trespass or other crime, against the person or property of any friendly Indian or Indians, which would be punishable, if committed within the jurisdiction of any state, against a citizen of the United States: or, unauthorized by law, and with a hostile intention, shall be found on any Indian land, such offender shall forfeit a sum not exceeding one hundred dollars, and be imprisoned not exceeding twelve months; and shall also, when property is taken or destroyed, forfeit and pay to such Indian or Indians, to whom the property taken and destroyed belongs, a sum equal to twice the just value of the property so taken or destroyed: and if such offender shall

be unable to pay a sum at least equal to the said just value, whatever such payment shall fall short of the said just value, shall be paid out of the treasury of the United States: *Provided nevertheless,* that no such Indian shall be entitled to any payment out of the treasury of the United States, for any such property taken or destroyed, if he, or any of the nation to which he belongs, shall have sought private revenge, or attempted to obtain satisfaction by any force or violence.

(1802)

Sec. 12. *And be it further enacted,* That no purchase, grant, lease, or other conveyance of lands, or any title or claim thereto, from any Indian, or nation, or tribe of Indians, within the bounds of the United States, shall be of any validity, in law or equity, unless the same be made by treaty or convention, entered into pursuant to the constitution.

An act to amend an act entitled "An act to regulate trade and intercourse with the Indian tribes, and to preserve peace on the frontiers", approved thirtieth of March, one thousand and eight hundred and two, approved May 6, 1822, Section 4, 3 Stat. 682, 683.

(1822)

Sec. 4. *And be it further enacted,* That, in all trials about the right of property, in which Indians shall be a party on one side and white persons on the other, the burden of proof shall rest upon the white person in every case where the Indian shall make out a presumption of title in himself from the fact of previous possession and ownership.

An act to regulate trade and intercourse with the Indian tribes, and to preserve peace on the frontiers, approved June 30, 1834, sections 12, 16 and 22, 4 Stat. 729, 730, 731, 733.

(1834)

Sec. 12. *And be it further enacted,* That no purchase, grant, lease, or other conveyance of lands, or of any title or claim thereto, from any Indian nation or tribe of Indians, shall be of any validity in law or equity, unless the same be made by treaty or convention entered into pursuant to the constitution.

(1834)

Sec. 16. *And be it further enacted,* That where, in the commission, by a white person, of any crime, offense, or misdemeanor, within the Indian country, the property of any friendly Indian is taken, injured or destroyed, and a conviction is had for such crime, offense, or misdemeanor, the person so convicted shall be sentenced to pay to such friendly Indian to whom the property may belong, or whose person may be injured, a sum equal to twice the just value of the property so taken, injured, or destroyed. And if such offender shall be unable to pay a sum at least equal to the just value or amount, whatever such payment shall fall short of the same shall be paid out of the treasury of the United States: *Provided,* that no such Indian shall be entitled to any payment out of the treasury of the United States, for any such property, if he, or any of the nation to which he belongs, shall have sought private revenge, or attempted to obtain satisfaction by any force or violence: *And provided, also,* That if such offender cannot be apprehended and brought to trial, the amount of such property shall be paid out of the treasury, as aforesaid.

(1834)

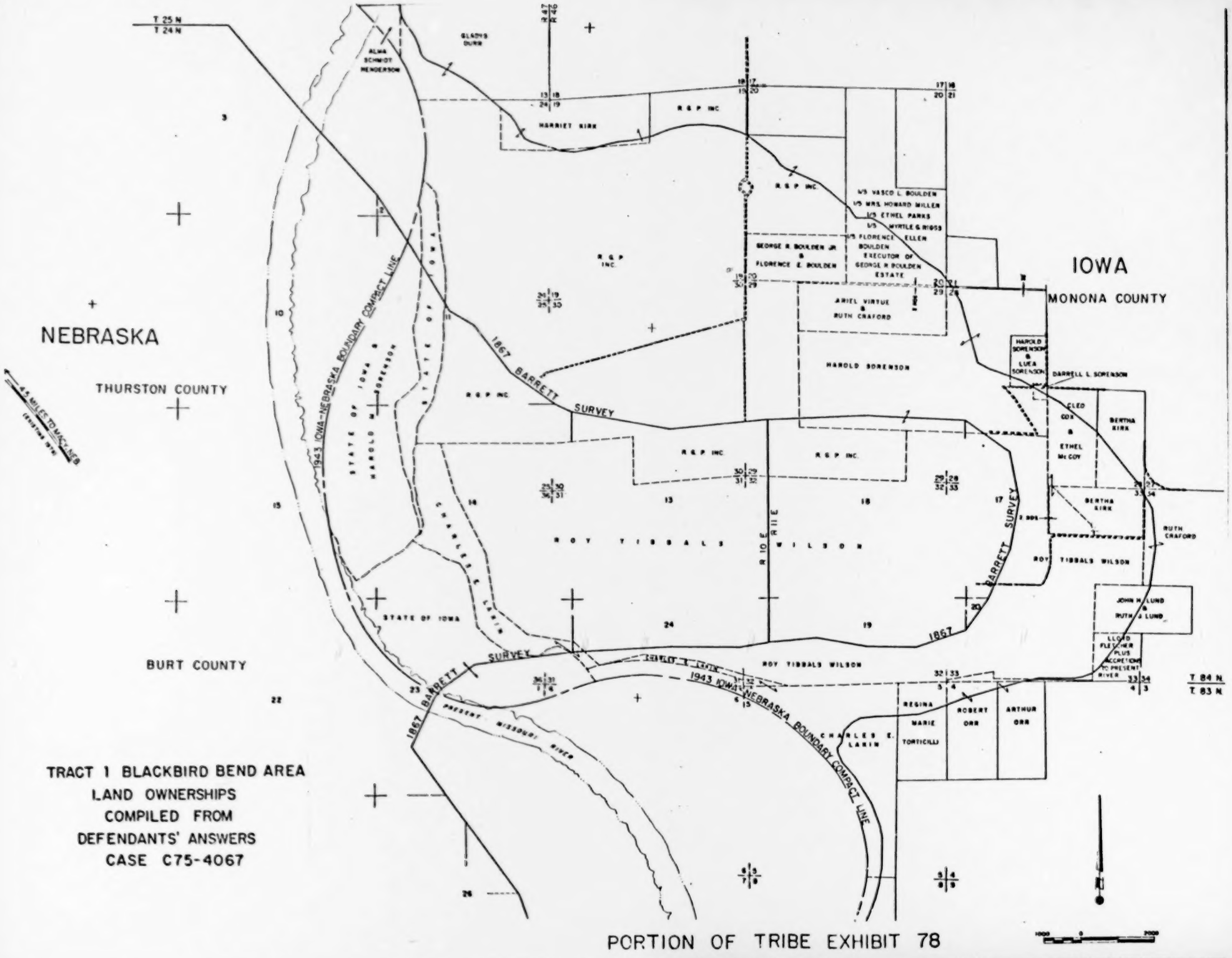
Sec. 22. *And be it further enacted,* That in all trials about the right of property in which an Indian may be a party on one side, and a white person on the other, the burden of proof shall rest upon the

white person, whenever the Indian shall make out a presumption of title in himself from the fact of previous possession or ownership.

United States Constitution, Amendment V, Due Process Clause

No person shall . . . be deprived of life, liberty or property, without due process of law; . . .

APPENDIX F



TRACT 1 BLACKBIRD BEND AREA
LAND OWNERSHIPS
COMPILED FROM
DEFENDANTS' ANSWERS
CASE C75-4067

PORTION OF TRIBE EXHIBIT 78